TPRG

PHASE I Project Report:

Cape Cod Seasonal Passenger Rail Service

Prepared for Cape Cod Regional Transit Authority
by the Transportation Planning and Resource Group,
March 2012

TPRG

1. Project: Cape Cod Seasonal Train Service

The Cape Cod Regional Transit Authority (CCRTA) engaged the Transportation Planning and Resource Group (TPRG) to explore if and how seasonal passenger rail service (essentially during summer weekends) could be reintroduced to provide a rail connection to Hyannis.

Cape Cod suffers from extreme road and bridge congestion due, in part, from the need for most visitors to use the existing two roadway bridges (Sagamore and Bourne). Summer traffic on the bridges almost doubles and has increased significantly over the years. This extensive congestion is not good for either Cape Cod's economy (with a significant focus on tourism) or the air quality. At the same time, there is a vastly improved local public transportation network on Cape Cod.

The purpose of this initiative is determine if and how to use the existing railroad right-of-way (owned by the Commonwealth of Massachusetts through its Massachusetts Department of Transportation (MassDOT)) to encourage those who are Cape-bound to comfortably, reliably and efficiently come to Cape Cod on the train rather than in an automobile. The target service would be weekends between Memorial Day and Labor Day(Boston to Hyannis Friday afternoons/evenings with return Sunday afternoons and Saturday round trip service).

The initial study plan was to focus on the steps necessary to bring back rail service originating in Boston with a target date of summer 2012. Subsequently, there would be an examination of service to Hyannis from New York. While a potential private sector operator was contacted early in the study, it soon became apparent that the more feasible plan was to extend existing Massachusetts Bay Transportation Authority (MBTA) commuter rail trains that would normally terminate in Middleboro on the existing tracks to Hyannis. This would eliminate the need for new rolling-stock and would mean better utilization of existing public assets that were not in use.

Unfortunately, during this process, the MBTA has faced the most significant financial crisis in its history.[1] As of March 2012, the MBTA's proposed FY13 budget includes the largest fare increase and service cuts in its history - cuts that include the elimination of all weekend commuter rail service, which would severely impact the ability to provide seasonal rail service in a manner that is affordable. While this debate is pending, the

[1] Though not as highly publicized, MassDOT is also facing a massive budget crisis.

prospect of major service cuts and fare increases is a major impediment to any effort to advance any new services - no matter how appealing or well supported they may be.[2]

Even though the proposed Seasonal rail plan would have no impact on the MBTA's cost structure, the reality of massive service cuts and fare increases has restricted the Commonwealth's ability to move forward with a new initiative that requires quick implementation. However, as will be discussed further below, there is significant interest in this project because it can generate substantial benefits to the region with limited impacts and using existing resources, so it is worth continuing to explore opportunities moving forward.

Please note that this study has included extensive analysis of many of the technical issues relevant to this project (operating plans to mesh with existing services, review of railroad agreements, etc.). The various technical memoranda are attached for further explanation and detail. This report summarizes the progress made and highlights the key issues to be addressed in order to fully understand the issues and the existing challenges as well as to complete a path to bring seasonal rail service back to Cape Cod.[3]

2. Project Description and Context: The Plan to bring seasonal visitors to Cape Cody rail springs from the fact that the basic infrastructure already exists and is publicly owned. However, the line's condition and its availability needed investigation. The results of those inquiries are summarized below and detailed in the attached memoranda. Also provided below is a discussion of Cape Cod's existing transit service. This is an important topic both because CCRTA intends to complement current options (primarily intercity bus) and because the rail service's appeal will be broadened by links to other mode, particularly-CCRTA's own transit routes.

a. Existing Infrastructure:

Currently, there is an active railroad right-of-way that runs from the MBTA's Middleboro commuter rail station to the Cape Cod Canal Bridge and on to Hyannis. This line is owned by the Commonwealth of Massachusetts acting through its Department of Transportation (MassDOT). The right-of-way consists of two lines - the Buzzards Bay Secondary and the Hyannis Secondary. The total distance is 42 miles from Middleboro to Hyannis. A more complete description of the right-of-way/infrastructure (bridges, stations, etc.) is included

[2] The budget actually has two options - one with a smaller fare increase and more service cuts and the other with a larger increase and fewer cuts. Both proposals, however, currently contemplate the end of late night and weekend commuter rail service.

[3] Seasonal rail service was in operations as recently as 1998 for the Cape Codder.

in the attached memorandum entitled CCRTA Existing Conditions Summary Report. The following description of the line is excerpted:

The segment of the Cape Main Line located north of the Cape Cod Canal Bridge is called the Buzzard Bay Secondary, which is approximately 18.4 miles in length, and begins in Lakeville at the interlocking named "Bay", the end of Massachusetts Bay Transportation Authority (MBTA) territory at Milepost (MP) 36.3. However, for this project, the northern limit would be the Middleborough MBTA platform, which is located approximately 0.75 miles north of Bay. The Buzzards Bay Secondary continues south from Bay through Rochester and Wareham, over the Cohasset Narrows Bridge to the end of the Buzzards Bay yard limits (MP 54.7) in Bourne, just north of the Cape Cod Canal Bridge. The Cohasset Narrows Bridge and the Buzzards Bay Station are both located within these yard limits.

Freight trains operate on this track five (5) or six (6) days a week from the Cape Cod Canal Bridge to the SEMASS facility in Rochester, MA and to the CSX facility in Middleborough, which is Mass Coastal's Class 1 Connection. The track from Middleborough to approximately 100 feet north of the switch at Buttermilk (MP 53.8), which is the northern end of the Buzzards Bay Yard, consists of 115-lb Continuous Welded Rail (CWR) on timber cross-ties. The area 100 feet north of the switch at Buttermilk (MP 53.8) to the Cape Cod Canal Bridge (MP 54.6) contains jointed rail on timber cross ties.

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The Hyannis Secondary portion of the Cape Main Line begins on Cape Cod just south of the Cape Cod Canal Bridge at Canal Junction in Bourne. The rail line extends approximately 24.3 miles south following the Cape Cod Canal and runs parallel to Route 6A through Sandwich and Barnstable. The corridor continues to the Yarmouth wye at Willow Street and travels south to the end of the line at Hyannis Station (MP 79.0). The track on this rail line consists of 107-lb jointed rail on timber cross-ties.

The Hyannis Secondary is the more heavily used portion of the Cape Main Line with the operation of both freight and passenger trains. The CCCRR operates several scenic/dinner trains per day in season, from May through October.[4]

As noted, a complete description of the Commonwealth's line is provided in the attached Existing Conditions report; however, it is important to highlight one key element of the infrastructure that is not owned by the Commonwealth - the Cape Cod Canal Rail Bridge. The Bridge is owned and operated by the Army Corps of Engineers, a Federal Agency. The normal position of the bridge is "up" - in other words, the track is generally elevated above

[4] The Energy Train also operates on the Hyannis Secondary.

the canal to allow marine traffic to use the Canal. For rail usage, the bridge must be "lowered" to a point that effectively precludes marine traffic from passing through the Canal. To forestall casualties from vessels unable to maneuver against the strong currents, the ACOE keeps marine traffic from entering the Canal when the bridge is in use.

This bridge movement is effectively managed among the interested parties, however, the ACOE (1) will be cautious in responding to requests for regular additional bridge movements that would impact marine traffic and (2) expects the railroad to be ready to cross when the bridge is lowered. A train that misses its slot to cross the bridge can be forced to wait until the ACOE is able to lower the bridge again at its convenience.[5] The relative timeliness of the MBTA's passenger service (compared to freight and excursion operations) is expected to make this manageable, but it will still be a key issue to address when the final operating plan is put into place. Further, the bridge is not currently staffed on Sundays and that is likely to be a cost issue with the ACOE.

b. Current Major Transportation Providers[6]:

i. CCRTA (http://www.capecodtransit.org/): The CCRTA, one of the Commonwealth's fifteen regional transit authorities under Mass. G.L. c.161B, is the primary public transportation provider on Cape Cod. Besides being the owner/operator of the Hyannis Intermodal Facility (the terminus of above mentioned rail lines), CCRTA operates the year-round fixed public transit service and the paratransit service and seasonal public transit service on Cape Cod.

The last note is especially important for the sake of this study. The Cape Cod population essentially doubles in the summer (from approximately 215,000) due largely to tourism/visitors/return of seasonal residents. This results in increasing congestion on the major roads and bridges to Cape Cod as well as on the local roads as the number of single occupancy cars increases. According to the 2011 Cape Cod Regional Transportation Plan (http://www.capecodcommission.org/resources/transportation/rtp/06_Congestion_0822_2011.pdf), while approximately 70,000 vehicles per day may cross the Cape Cod Canal bridges in January, that number increases to almost 130,000 per day in July and August. Moreover, traffic in January is now at the same level as traffic was in July 25 years ago. To counter the impacts of this trend, CCRTA has aggressively increased services to provide a

[5] Ironically, TPRG and the consultant team missed our bridge slot during a tour organized and operated by the freight railroad and was forced to wait approximately 45 minutes for another slot.

[6] Please note that this report does not specifically focus on other important transportation providers, such as Cape Air (aviation) or HyLine Cruises (ferries). The CCRTA, however, has continuously emphasized the importance of a unified, integrated network on/off and around Cape Cod.

"car-free" option for visitors as well as residents and has seen its ridership increase 8.7% increase between FY09 and FY10.[7]

ii. Plymouth and Brockton Bus (P&B) (http://www.p-b.com/): P&B is an intercity bus operator whose service primarily runs up and down the Rte 3 and Route 6 corridors between Boston, Hyannis, and Provincetown. Of particular relevance for Seasonal rail, P&B operates service from Logan Airport and South Station to the Hyannis Intermodal Center. P&B runs additional service during the summer months, with an adult fare of $19 one way or $35 round trip during Summer 2011 from South Station ($25 and $45 respectively from Logan Airport).

iii. Peter Pan/Bonanza Bus (Peter Pan)(http://www.peterpanbus.com/): Peter Pan is an intercity bus operator that operates service from Hyannis to Providence and on to New York. A complete list of the services from Hyannis is available from the Peter Pan website. The company also operates a separate service from Falmouth to Boston.

iv. Cape Rail (http://www.caperailinc.com) MassDOT competitively selected two rail companies who currently operate on the line - Mass Coastal is the freight rail operator and Cape Cod Central is the tourist operator. Both companies are part of Cape Rail, Inc.

v. Mass Coastal (http://www.masscoastal.com/) is described as "Provider of freight transportation services to Southeastern Massachusetts and Cape Cod". Although not its only client, a significant portion of Mass Coastal's freight services off of Cape Cod involves hauling municipal waste from CapeCod towns. Mass Coastal has an agreement with MassDOT to operate until 2018.

vi. Cape Cod Central is the excursion or scenic railroad that runs special and regularly scheduled services such as dinner trains, a New Year's special gala train and Sunday brunch trains, among others. Cape Cod Central has an agreement with MassDOT to operate until 2013.

c. Capital Improvements:

A compete description of the condition of the right-of-way is included in the attached report. For the purpose of this report, it is most important to focus on the following:

The freight railroad is required per its agreements with MassDOT to maintain the right-of-way in Class II condition. Currently, the line does meet this requirement. However, the

[7] Cape Cod Regional Transportation Plan date August 2011, Ch. 6.

condition of the line (even within the broad category of Class II) that would provide the smoothest and surest seasonal passenger rail service is generally not deemed necessary for freight or "tourist" trains. Municipal waste may not mind if the trip is not comfortable (bumpy, etc.) and diners on a tourist train may not object to slow-orders that give them more time to enjoy their dinner. However, visitors leaving Boston to begin a vacation or to see their families will probably not be as tolerant of a potentially uncomfortable or slow ride.

Given the importance of this rail right-of-way to the Cape region (possible seasonal service to provide a new option for visitors and the existing train usage on the line for freight and tourists), CCRTA has reason to invest funds to finance capital improvements into this state-owned asset. Such an investment would help make sure that the line could meet passenger expectations (thereby generating more tourism dollars with fewer impacts) and also benefit the other services that currently use the right-of-way.

The attached memorandum reflects extensive discussions with MassDOT and the MBTA and includes a detailed description of the main improvements that would need to be undertaken to provide a safe, reliable seasonal rail service. However, it is important to note that this number is neither absolute nor static. For example, there are constant maintenance activities being undertaken by the operating railroads and capital improvements being pursued by MassDOT. As a result, there may be improvements and activities that will be underway in the coming months that can reduce the identified improvements in terms of scope and cost.

A key next step for this project is to determine whether there are new sources of funds that can be used to offset some of the capital costs, particularly those attributable to the higher performance desired for passenger service. Additionally, there may be opportunities to upgrade focused segments to higher class levels that would allow increased operating speeds (i.e., reduce overall trip time).

3. Operating Plan:

To run a cost-effective service, the general operating profile would be to extend MBTA commuter rail trains that would otherwise layover in Middleboro (i.e., would be taken out of service) on to Hyannis. This would have the benefit of efficiently using existing rolling-stock to simply continue its trip - thereby reducing the operating and capital costs of the project. Given the MBTA's vast experience, the service would be a dependable, one-seat (seamless) ride from Boston and the suburban stations on the line (e.g., Quincy, Brockton and Bridgewater).

Based on discussions with MBTA staff, operating plans were developed that would include one (or two) peak period trains leaving South Station on Friday during the evening commute and continuing past Middleboro to Hyannis. There would also be a round trip train on Saturday morning that would return Saturday evening and a return trip (or two) on Sunday. There could be stops(full or flag) at Wareham, Buzzards Bay and Hyannis . Modest station improvements would beneficial.

The proposed service would not adversely impact any existing commuter services and would not impact the existing freight/tourist trains beyond Middleboro. Further discussions would need to take place with the Army Corps, which is responsible for Canal bridge operations, but the service has been designed to have the minimum number of bridge movements possible to accommodate rail traffic. A full report of the schedule and costs is attached.

It is important to note that the team did discuss with Cape Rail whether it would be interested in operating a seasonal service. Having an operator other than the MBTA raises issues that could materially affect service characteristics - the operator could likely not operate on the MBTA line (the line is likely too busy for additional train sets to run without impacting the commuter service), so would that require a transfer at Middleboro? Would an operator have sufficient equipment? A reliable track-record, etc.? How would the transfer be managed to accommodate customers conveniently?

While Cape Rail's possible involvement raised a number of potential challenges (as well as some possible positives), Cape Rail explained that it was not prepared to operate the service as it had other priorities. It therefore chose not to submit a proposal. As a result, the MBTA extended service remains the best option and the one being carried forward.

Discussions with the MBTA indicate that it is particularly interested in working with CCRTA on providing a "bike-coach" (CCRTA has made great strides to promote bicycle access on its system and around the Cape generally and interest in cycling is growing significantly around the Commonwealth), to provide amenities (some sort of contract to provide limited food/beverages) and to coordinate to maximize parking options. These items would clearly enhance service and arrangements for them should be furthered during the revised Phase 2 (discussed below) after a number of fare and service issues are addressed by the MBTA during Spring 2012.

4. Project Benefits:

A continued exploration of Seasonal Rail service makes business and transportation sense for MassDOT, CCRTA, and the MBTA despite the very difficult financial challenges that all three agencies face.

This is true not only because of the benefits that the service could achieve[8], but also because of the obligations that would not encumber the participants:

The Cape Cod Seasonal Service is not a commuter service – this is a seasonal service to operate on summer weekends and designed to bring tourists to one of the major tourist destinations in New England. It would charge market rate and (much like the Patriots train to Gillette) would expect no operating subsidy from the MBTA. It would not add to the MBTA's operating deficit. Instead, there would be an agreement to pay the MBTA to extend its current service consistent with its existing operating plan.

The Cape Cod Seasonal service will not require new equipment or new right of way. New rolling stock and right of way acquisition can be a very costly element for any rail project; this plan uses existing equipment that would otherwise not be in use, as well as an underutilized MassDOT owned rail line to Hyannis. The service also makes better use of the "3rd" bridge on the Cape – the rail bridge; thereby providing an alternative to the congestion on the existing road bridges.

The service would be consistent with the Secretary's call for a more businesslike approach to transportation choices – including transit. In fact, the service may bring approximately $1M in new tourism dollars. It could also serve as an example of a new paradigm for local parties to partner with MassDOT to bring new resources to advance regionally important projects.

This seasonal service is consistent with"GreenDOT" and MassDOT's goal to develop "a comprehensive environmental responsibility and sustainability initiative that will make MassDOT a national leader in "greening" the state transportation system." The service will provide a new transit alternative to get Cape visitors out of their cars and will have a significant component that promotes bicycling. This will help MassDOT meet its stated goals of (1) reducing greenhouse gas (GHG) emissions and (2) promoting the healthy transportation options of walking, bicycling, and public transit.

This limited service plan will complement existing intercity bus service, but still increase options for the travelling public.

The rail service will have a fare comparable to the bus service.

[8] A complete report noting the potential benefits of the project is attached hereto.

Rail riders who intend a longer stay (Monday) will often take the bus back. Some riders will choose rail one way and bus the other; the increase in multimodal options will additional reliance on both bus and rail.

There will be a coordinated marketing campaign so that riders can choose whichever mode is more convenient for them (ex: the Downeaster).

While rail will be able to offer better reliability/predictability at peak times (as well as the opportunity to bring bicycles), there will still be many travelers who want the 7-day a week frequency of intercity bus service, which also operates year-round.

The rail service is aimed at a market that will include:

- Summer visitors who do not want to start or end their vacations stuck on the two highway bridges to the Cape.

- Individuals and couples (downtown workers, college students, etc.) who are joining others who drove to the Cape.

- Saturday day-trippers, particularly those who might want to see the Cape by bicycle.

Additionally, the plan is to have the service be coordinated with other major transportation, such as GATRA service in the Wareham/Buzzard Bay area and the ferries to the islands.

Resources such as the Cape Cod Chamber of Commerce and the Massachusetts Office of Travel and Tourism possess expertise that can help shape a successful marketing plan and link it to existing Cape Cod businesses.

The proposed seasonal service will provide a new mobility option for people traveling to one of New England's premier tourist and summer recreation destinations. Cape Cod is one of Massachusetts' best known vacation places, but over the last two decades it has evolved into a more urbanized area facing all the challenges of changing land uses, including roadway congestion and threats to the region's sole aquifer.

While only 3.3 % of Massachusetts' residents live full time on the Cape, in the summer the Cape's population doubles and 42% of those visitors are from other parts of Massachusetts. Not only do almost 5% of all Massachusetts residents spend some time on the Cape each year, tourism on the Cape provides 26% of all Cape employment and 40% of the area's economic activity. This activity provides important revenue to the towns and the state

through the room occupancy tax and the meals tax. But tourism also burdens the Cape's infrastructure.

That burden is particularly acute at the Cape Cod Canal and is experienced there every summer weekend by thousands of Massachusetts residents and visitors. But beyond the Canal crossings, visitors who choose to drive mean twice as many vehicles crowding beach roads, town centers, and the main highways on which Cape residents depend.

This project would leverage existing underutilized transportation assets to allow more visitors to enjoy the Cape with less congestion. Foremost among those assets is the Hyannis rail line that MassDOT owns. That rail line is now used for the Energy Train that brings trash from the Cape and the Dinner/Tourist Train that offers families and others excursion trips between Hyannis and the Canal.

While the participation of many partners would be necessary (CCRTA, MassDOT, USACOE, MBTA) the service could establish a new template for shared state-local funding of market driven non-auto options. The service would also demonstrate how the Cape can attract more tourism with fewer impacts – ridership figures indicate that a weekend seasonal service could attract about $1m more in tourist spending annually, with fewer emissions and less congestion. A calculation of some of those benefits is attached.

5. Finance:

Given the level of support for the concept of this project, identifying the proper/adequate funding for the capital and operating costs is essential to bringing rail service to fruition. There is an acceptable mechanism to transfer capital funds (likely federal formula funds) among agencies to contribute to or completely fund the necessary capital improvements and operations. The original concept was to simply use the Pilgrim Partnership as a model - transfer capital funds in return for running an the operation. This remains a viable option that can be accomplished among the parties.

However, given the need for capital improvements to the right of way and MassDOT's/the MBTA's fiscal challenges, it is worth exploring alternative funding sources to see if there are other "pots" available to fund the desired capital improvements, such the Federal Railroad Administration's Railroad Rehabilitation and Improvement Program.

6. Next Steps:

Phase I of this project was originally envisioned to focus primarily on the steps necessary to implement seasonal rail service to Cape Cod from Boston. Phase II would then shift the focus towards the revival of the service from New York to Cape Cod (with certain Boston to Cape Cod implementation issues on-going).

Phase 1 has produced a scenario that is quite promising and should be further pursued, notwithstanding the external challenges to this project (primarily the MBTA and MassDOT budget issues). The prospects for service from New York, however, are less clear and will depend in part of Congressional funding for Amtrak.

But for the need to consider and prioritize the impacts of the MBTA's proposals for fare increases and service cuts, service this summer could have been feasible with an aggressive implementation schedule. The delay, while disappointing, provides an opportunity to strengthen the service through cost effective contracting of capital improvements, improved marketing, new funding sources, and a more extensive set of passenger amenities.

Based on the above, it is recommended that the Phase I initiative be extended to provide additional opportunities to identify alternative funding sources and to continue discussions with MassDOT/MBTA about changes/alternatives that may make seasonal service enjoy a stronger possibility of success. Based on discussions with Patricia Quinn, Executive Director of the Northern New England Passenger Rail Authority, there should be concurrent additional discussions and coordination with the key state and local tourism agencies and chambers of commerce to develop a comprehensive plan to capture the myriad of markets that will want to take advantage of this service (according to the Cape Cod Chamber of Commerce, transportation challenges remain a top issue for its members).

7. Meetings to date include:

Richard Davey, Secretary of Transportation, MassDOT
Jon Davis, MBTA, Acting General Manager
John Ray & Tim Dougherty, MassDOT Rail
Jim O'Leary, MBCR
Steve Jones and Paul Carroll, MBTA Commuter Rail
Peter Butler, FTA Region 1 - Deputy Administrator
Cape Rail Representatives
George & Chris Anzuoni, P&B Bus
Mike Sharff & Bob Schwarz, Peter Pan Bus
Rep. David Strauss, Co-Chair, Transportation Committee
Mark Boyle, MBTA AGM for Development
David Scudder, HyLine Cruises
Wendy Northcross, Cape Cod Chamber of Commerce - CEO
Patricia Quinn, Northern New England Passenger Rail Authority - Executive Director
Frank Gay, GATRA - Administrator
Larry Davis, Army Corps of Engineers

Attachments:

A -Existing Conditions Summary Report
B -Operating Plan and Maintenance Costs Memorandum
C -Infrastructure Costs Discussion Memorandum
D -Rail Benefits Memorandum
E -Cape Cod Seasonal Rail Ridership and Service Planning

Cape Cod Seasonal Rail Planning Study

Existing Conditions Summary Report

The Cape Main Line corridor between Middleborough and Hyannis includes the railroad lines known as the Buzzards Bay Secondary (located north of the Cape Cod Canal Bridge) and the Hyannis Secondary (located south of the Cape Cod Canal Bridge). The *Existing Conditions Summary Report* of the entire corridor (Middleborough to Hyannis) provides sufficient detail of the railroad infrastructure to gain an understanding of the scope and cost of any infrastructure improvements that may be necessary to operate a tourist passenger rail service.

Further discussion of the existing conditions and required improvements is included in the *Phase I Infrastructure Review* report.

Cape Cod Canal Bridge

The existing vertical-lift bridge over the Cape Cod Canal is 806 feet long, 297 feet high and has a high water clearance of 136 feet. This bridge, which was built in 1935 and underwent a major rehabilitation effort concluding in 2006, is owned and maintained by the U.S. Army Corps of Engineers (ACOE). It is normally kept in the raised position, being lowered only for passage by the railroad. It is understood that marine traffic has statutory right of-way over rail traffic. US ACOE personnel control all functional aspects of the bridge, including the timing of bridge lifts and lowers. Regulations regarding the operation of vessels in the canal and the management of canal marine traffic are provided in Title 33, Code of Federal Regulations, Section 207.20. Furthermore, it has been agreed between MassDOT and the ACOE that the Corps will operate the Cape Cod Canal Bridge to reasonably accommodate scheduled rail traffic, while maintaining rights for marine traffic.

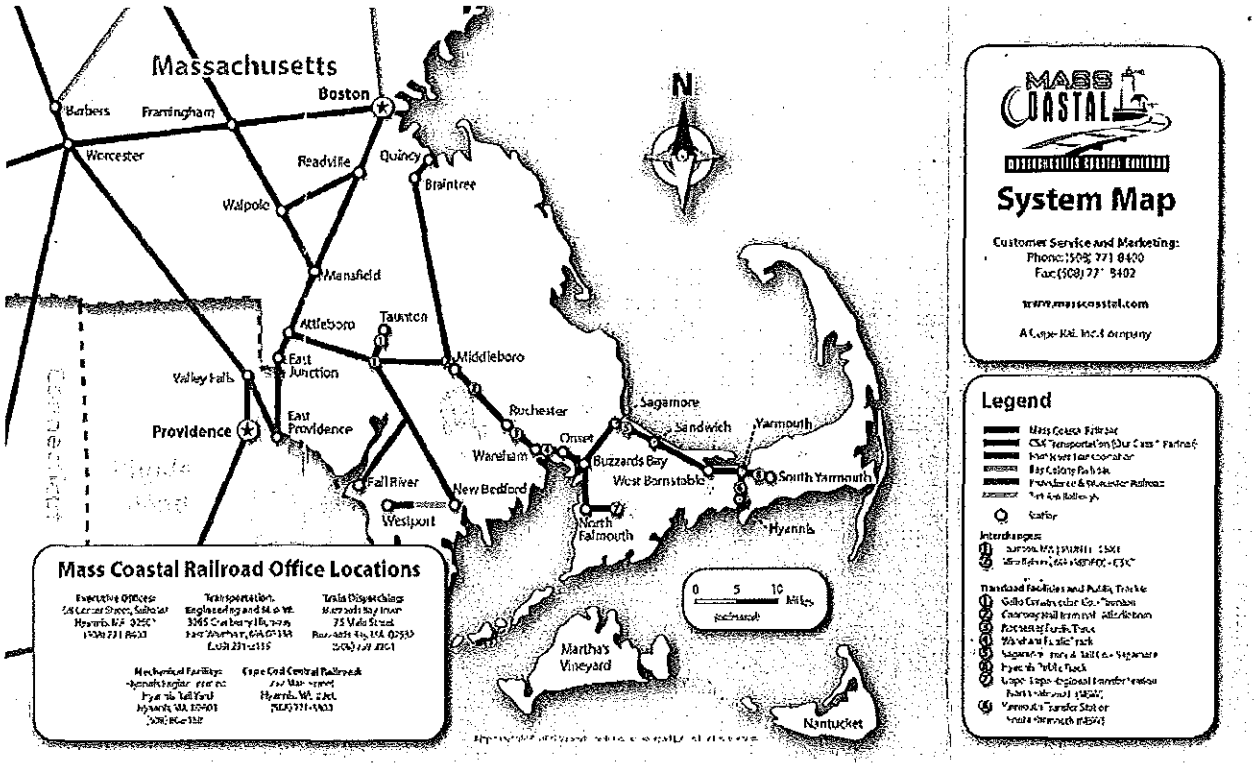
Cape Cod Canal Bridge

Source: US ACOE

Based on discussions with the Massachusetts Coastal Railroad (Mass Coastal), it is understood that a schedule has been established between the Railroad and the ACOE regarding typical bridge movements. The bridge is lowered between two and six times per day, depending on the train schedule each day. Currently, the bridge is not operated on Sundays. The railroad reports that it regularly is required to wait for the bridge to be lowered due to commercial marine traffic. It is understood that even though a train may be approaching the bridge, it may need to wait until a commercial vessel passes, since, depending on the tides/currents and the location of the vessel, it may not be safe for the vessel to slow or wait for the train.

Right-of-Way / Track

As noted above, the Cape Main Line extends from Middleborough to the southern portion of the corridor in Hyannis and is comprised of two railroad lines, the Buzzards Bay Secondary and the Hyannis Secondary, totaling approximately 42.7 miles. The state-owned corridor is utilized for freight transportation, which is currently operated by the Mass Coastal, as well as a scenic excursion/dinner train service operated by the Cape Cod Central Railroad (CCCRR).



Source: Massachusetts Coastal Railroad, 2008.

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Rail Line	Location	Milepost (MP)	FRA Class	MAS (mph)		Total Distance (miles)
				Freight	Passenger	
Buzzards Bay Secondary	Middleborough to Buzzards Bay	MassDOT: MP 1.5- 19.9 Mass Coastal: MP 36.3- 54.7	Class 2	25	30	18.4
Hyannis Secondary	Bourne to Hyannis	MassDOT: MP 0.0- 24.3 Mass Coastal: MP 54.7- 79.0				24.3
Distance from Bay to Middleborough Platform:						0.75
Total:						**~ 43.5**

The Cape Main Line corridor consists of single mainline track with a number of passing sidings located throughout the two rail line segments. The Buzzards Bay Secondary rail line has passing sidings at SEMASS, Tremont, East Wareham and Buttermilk. For the Hyannis Secondary, there are passing sidings located at Sagamore, Sandwich and West Barnstable. The specific locations and lengths of these sidings are listed below.

Rail Line	Passing Siding Location	Approximate Milepost (MP)	Total Length (feet)
Buzzards Bay Secondary	SEMASS	44.0	2,150
	Tremont	45.2	5,200
	East Wareham	50.3	1,300
	Buttermilk	54.0	2,800
Hyannis Secondary	Sagamore	59.6	4,100
	Sandwich	62.1	1,700
	West Barnstable	69.4	1,200

The track on the Cape Main Line is operated and maintained to Federal Railroad Administration (FRA) Class 2 standards. FRA's track safety standards establish nine specific Classes of Track (Class 1 to Class 9), plus a category known as Excepted Track. The difference between each Class of Track is based on progressively more exacting standards for track structure, geometry, and inspection frequency. Each Class of Track has a corresponding maximum allowable operating speed for both freight and passenger trains. The higher the Class of Track, the greater the allowable track speed and the more stringent track safety standards apply. Since the Buzzards Bay Secondary and Hyannis Secondary rail lines are maintained to FRA Class 2 standards, the maximum allowable operating speed is 25 miles per hour (mph) for freight trains and

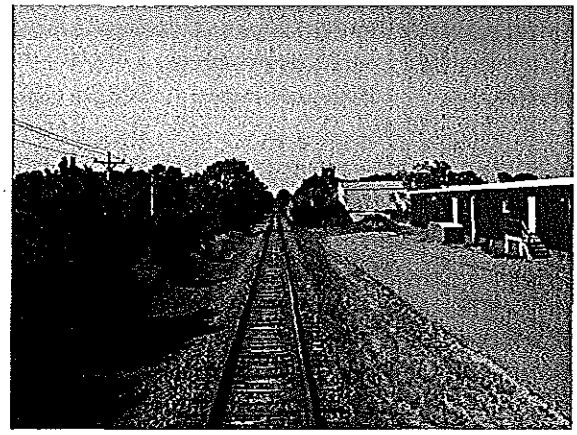
30 mph for passenger trains. For both rail lines, there are several permanent speed restrictions due to grade crossing geometry, as well as track and bridge conditions. The only locations with permanent speed restrictions are the Route 6 at-grade crossing in Wareham (15 mph) and the Cape Cod Canal Bridge (5 mph). The speed limit is 10 mph in both the Buzzards Bay Yard from Buttermilk to Buzzards Bay Station, as well as the Hyannis Yard, which extends from MP 78.0 to the end of track.

Buzzards Bay Secondary

The Buzzards Bay Secondary consists of 115-lb CWR and associated Other Track Material (OTM), which was installed in 1986. Due to the limited existing train frequencies and tonnages on the rail line, the rail continues to be serviceable for the foreseeable future assuming the same utilization.

Since the Buzzards Bay Secondary is constructed with welded rail, tie condition cannot and must not be allowed to deteriorate down to the level that exists on the other parts of the railroad. Ties on this line are currently 25 years old, since they were last installed in approximately 1986. As of 2011, it is estimated that about 10% of the ties have failed. At this time, approximately 15% of the ties are defective, which means in five more years (2016), when the ties are 30 years old, about 20% of the ties will have failed, and in 2026, when the ties are 40 years, old, approximately 60% of the ties will have failed. Welded rail will not tolerate advanced stages of tie decay, as it is subjected to higher longitudinal and lateral forces, and movement of the track from weak ties can result.

Looking North in Wareham



The shoulder ballast along this segment of the Cape Main Line has areas which border on insufficient on both sides of the railroad, as a result of constant trespassing by motorized recreational vehicles riding on the ballast shoulder. The conditions in Lakeville between MP 37.5 and MP 40.5 are of most significant concern. Ballast regulator work has been recently completed throughout the rail line, so the shoulder condition is improving. The shoulder condition will need to be continuously addressed to reduce the possibility of track misalignments in CWR, and from falling below the published standards for FRA Class 2 Track.

Another concern on the Buzzards Bay Secondary is the vegetation, which is continuing to grow along the line, and there are a number of locations where brush and trees are encroaching on grade crossing sight lines, and on the general right-of-way. In various locations, vegetation appears to be striking the equipment, in addition to growing adjacent to the right-of-way and in the track.

Hyannis Secondary

The Hyannis Secondary rail line consists of non-control cooled 107-lb jointed rail and associated OTM. The current tie condition of the Hyannis Secondary is considered tenuous at best. This is due to the fact that the last production tie program performed on these lines was accomplished in 1986 when the Cape Main Line was rehabilitated, so the majority of good ties remaining on these rail lines are at least 25 years old. The typical life of a tie is 40 years in these locations, so it is anticipated that many additional ties will continue to fail due to age. Therefore, just to replace defective ties and not to increase FRA Class will require a concentrated cyclical tie replacement program.

In the locations of curved track, the tie condition is a significant issue. Sample tie counts indicate that in many locations, tie conditions meet the absolute minimum standards required for FRA Class 2 (i.e., 8 good

ties on tangent and 9 good ties in curves per 39 foot rail). In past years, the ties on the Hyannis Secondary sidings have been in very poor condition. In 2008, the sidings were classified as Excepted Track due to the tie condition. MassDOT and Mass Coastal implemented a siding and turnout improvement program to remedy the conditions.

In 2010 and 2011, a loose joint problem created in 1986 between Bourne and Hyannis was addressed through a bolt replacement program. However, at the majority of those joints, the rail ends are raised and sitting up above the joint ties where new bolts were installed and tightened. Since new joint ties have not been installed, many joints are no longer providing effective support and holding gage within prescribed limits. In order to maintain the safety of operations of Class 2speeds, a tie and joint tamping program must be accomplished on this line segment. Additionally, this joint condition degrades the ride quality of passenger rail trains leading to excessive sway.

Another issue on this line is that the low rail appears to be pulling out or "chording" in several curve locations. This condition is caused by drawbar forces to the inside of a curve when a train progresses through a curve that has weak or marginal ties. This condition illustrates the immediate need to install ties and regage as appropriate.

The vegetation throughout the Hyannis Secondary is an issue at a number of locations, since it is overgrown and appears to be striking the equipment. In addition, there are a number of drainage issues that need to be addressed. In Sandwich, there is a wash-in problem occurring at the culvert located at MP 64.8, so ditching and the installation of new cross drains across the track is required to move the water building up on the south side of track, which is saturating the track roadbed. An additional ponding and water build up issue exists further south in Sandwich (MP 65.15-65.76) on the west side of the railroad embankment between Atkins Road and Old County Road. When water is not able to flow freely through ditches and culverts, it typically ponds on one side of the track and then slowly soaks its way through the roadbed, creating weak subgrade conditions. In these locations along the line, the surface and alignment of the track is poor since the sub-grade material in the trackbed is soaked with water and has lost its bearing capacity (ability to bear weight).

Bridges

Between Middleborough and Hyannis, the rail line crosses over eleven bridges. The length of the bridges range from 10 feet to 800 feet, with three crossing over roadways, one cattle pass, and the other seven bridges crossing bodies of water. Many of the bridges are only 25 years old, having been built in 1986. The Cohasset Narrows Bridge is currently under repair.

Cohasset Narrows Bridge

Milepost	Crossing	Town	Type	Length	Built
45.72	Tail Race Creek	Wareham	Deck Plate Girder	40 feet	N/A
47.09	Main Street	Wareham	Thru Plate Girder	35 feet	1986
49.44	Wankinco River	Wareham	Timber Stingers	123 feet	1986
49.47	Route 6	Wareham	I-Beams	N/A	1986
54.31	Cohasset Narrows	Wareham	Deck/Thru Plate Girder	275 feet	1912
54.84	Cape Cod Canal	Bourne	Thru Truss	800 feet	1935
55.43	Aptuxcet Road	Bourne	I-Beams	23 feet	N/A
61.95	Mill Creek	Sandwich	I-Beams	58 feet	1986
70.05	Bridge Creek	Barnstable	Concrete Box	10 feet	N/A
72.00	Route 6A	Barnstable	Thru Plate Girder	N/A	1986
72.10	Hinkley's Farm Pass	Barnstable	Timber Stringers	12.5 feet	N/A

In 2010, a bridge inspection program was conducted for all the undergrade bridges along the line. The inspection program was conducted to assess the conditions for the existing freight traffic operating at the existing speeds. The inspection program did not include detailed load ratings for each of the bridges. The results of the inspection program identified four bridges for which work was categorized as necessary in the next five years, and one bridge that could be considered for elimination. Since that time, two bridge improvement projects have been initiated and are underway. The priority bridge improvements included the following:

Milepost	Crossing	Necessary Improvements	Current Status
45.72	Tail Race Creek	Replace 34 bridge timbers and walkway; repair walkway joist, posts, and rails.	Completed.
47.09	Main Street	Repair damage from 7/1/10 collision.	Completed.
49.47	Route 6	Form and pour voids at south abutment sheet piles.	
54.31	Cohasset Narrows	Replace stringers, repoint piers, replace spans, among other improvements.	Currently Under Repair.
72.1	Hinkley's Farm Pass	Negotiate with easement holder to fill in bridge.	

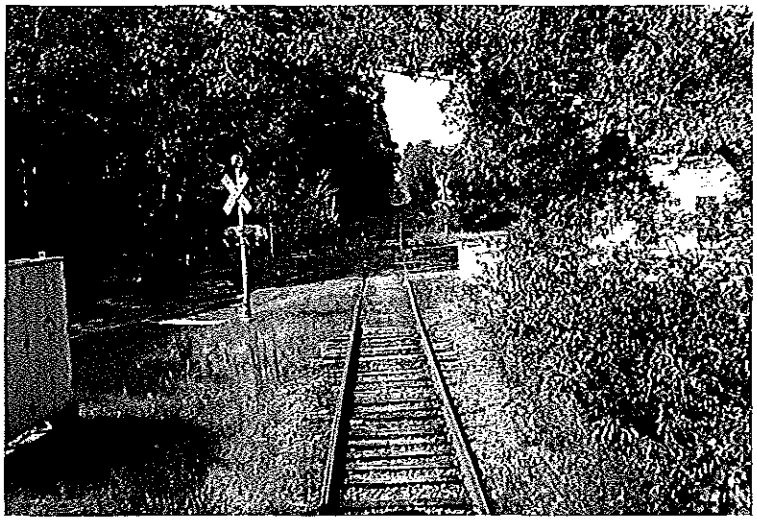
At-Grade Crossings

Active and Passive Warning Systems

There are 33 public at-grade crossings and 21 private at-grade crossings on the line. All of the public crossings are equipped with active warning systems that alert roadway users that a train is approaching. These "active and passive" warning systems include advance warning signage, pavement markings, flashing light signals and, at some locations, gates.

Seventeen of the public crossings have only flashing light signals, while 16 of the crossings have both flashing lights and gates.

Grade Crossing in Sandwich



None of the private at-grade crossings have active warning systems. Some have been fenced and gated to prevent use.

The majority of the public at-grade crossings utilize redundant first generation motion sensor systems to activate the active warning system equipment when a train approaches the crossing at a speed which exceeds one mile per hour. In general, the condition of the wayside cases and highway crossing equipment is in a good state of repair.

Although the first generation motion sensor equipment is functional, 26 of the 33 at-grade crossings are at risk of becoming non-maintainable since this first generation is no longer supported by the manufacturer. The unit (Safetran model number 62585 Motion Sensor) is a non-programmable unit and is a high maintenance item, which requires constant manual adjustment by the signal maintainer as the ballast conditions change from varying weather and seasonal conditions such as salted roadways. If the system is not adjusted properly to those changing conditions, the gates and flashers will operate erratically, most often

staying activated well after a train has departed the crossing. Although these units are still vital and can continue to be maintained to some extent, as they continue to age, the reliability of these systems will continue to decrease. It is recommended that these systems be phased out over time and upgraded with either the latest generation of motion detector or constant warning time equipment (predictor), as is installed in the other seven crossings noted below.

Five (5) at-grade crossings contain the newer model motion sensor systems. These new systems (Safetran model 2000) provide increased processing speed and shunting detection software that enhances train detection in dark territory and excessive rust build-up where train traffic is minimal. The 2000 model also features diagnostics data recording and can be programmed from a remote location.

Two (2) at-grade crossings, Elm Street in Wareham and Town Neck Road in Sandwich, have been upgraded to include the Safetran model 3000 Grade Crossing Predictor system, which is the next level up from the 2000 motion sensor model. This "Predictor" type system provides a constant warning time for trains approaching the crossing when trains are traveling at varying speeds. The system internally detects a train when it enters the approach termination shunt, then instantly computes the train speed and distance from the crossing to activate the warning system equipment at a point that provides a constant time. This programmable time is set to ensure compliance with FRA requirements under CFR 49 Part 234.225, which requires the grade crossing warning system to provide no less than 20 seconds warning time from initial activation to a train's arrival at the crossing. This constant warning time system is beneficial at crossings where trains may travel at significantly different speeds. This can minimize the time the warning devices are activated and give the traveling public a look of consistency in the operation of gates and flashing lights.

An at-grade crossing improvement program is underway along the corridor that includes the installation of crossing gates in addition to flashing light signals at six locations. The crossing locations include Freezer Road, Willow Street and Old County Road in Sandwich and Route 149, Braggs Lane and Mary Dunn Road in Barnstable.

The following table lists all of the at-grade crossings on the Cape Main Line to include highway crossing name, railroad milepost (MP) location, ownership, type of equipment and activation device at each location.

Highway Crossing Name	RR Mile Post	Ownership	Active Warning System Equipment	Activation Equipment Type
Miller Street	39.51	Public	Flashers/Gates	Motion Sensor (Model 62585)
Keedwells	41.10	Private	None	None
Spruce Street	41.65	Public	Flashers/Gates	Motion Sensor (Model 62585)
Hells Blazes	43.40	Private	None	None
County Road	44.87	Public	Flashers/Gates	Motion Sensor (Model 62585)
Station Street	47.19	Public	Flashers/Gates	Motion Sensor (Model 62585)
Hathaway Road	47.79	Public	Flashers/Gates	Motion Sensor (Model 62585)
Elm Street	48.35	Public	Flashers/Gates	Crossing Predictor (3000 model)
Sandwich Road	49.47	Public	Flashers/Gates	Programmable (2000 model)
Indian Neck	49.89	Public	Flashers/Gates	Motion Sensor (Model 62585)
Depot Street	51.29	Public	Flashers/Gates	Motion Sensor (Model 62585)
Walmart Access	51.80	Private	None	None

Highway Crossing Name	RR Mile Post	Ownership	Active Warning System Equipment	Activation Equipment Type
Main Avenue	52.68	Public	Flashers/Gates	Motion Sensor (Model 62585)
Academy Drive	54.60	Public	Flashers	Motion Sensor (Model 62585)
Army Corps	54.70	Private	Fenced/Gated	None
Bourne Bridge	56.37	Private	None	None
Army Corps Canal Access	57.80	Private	Fenced/Gated	None
Sagamore Bridge Access	59.55	Private	None	None
Tank Farm	60.55	Private	None	None
Canal Electric	61.15	Private	Fenced/Gated	None
Freezer Road	61.26	Public	Flashers (Gates being Installed)	Motion Sensor (Model 62585)
Town Neck Road	61.56	Public	Flashers	Crossing Predictor (3000 model)
Willow Street	62.09	Public	Flashers (Gates being Installed)	Motion Sensor (Model 62585)
Liberty Street	62.28	Public	Flashers	Motion Sensor (Model 62585)
Dewey Avenue	62.61	Public	Flashers	Motion Sensor (Model 62585)
Old Dump Road	63.10	Private	None	None
Great Island Road	63.37	Private	None	None
Spring Hill Road	63.56	Public	Flashers	Motion Sensor (Model 62585)
Lampi's Bog Access	64.05	Private	None	None
Quaker Meeting House Road	64.35	Public	Flashers	Programmable (2000 model)
Route 6A	64.91	Public	Flashers/Gates	Programmable (2000 model)
Atkins Road	65.15	Public	Flashers	Motion Sensor (Model 62585)
Whites Crossing	65.59	Private	None	None
Old County Road	65.76	Public	Flashers (Gates to be Installed)	Programmable (2000 model)
Game Preserve	66.24	Private	None	None
Talbots Point	66.56	Private	None	None
Maple Street	68.54	Public	Flashers	Motion Sensor (Model 62585)
Willow Street	69.10	Public	Flashers	Motion Sensor (Model 62585)
Route 149	69.42	Public	Flashers(Gates being Installed)	Motion Sensor (Model 62585)
Route 6A	69.95	Public	Flashers/Gates	Motion Sensor (Model 62585)
Farrington Way	71.18	Private	None	None
Pilots Path	71.25	Private	None	None
Fergusons Way	71.73	Private	None	None

Highway Crossing Name	RR Mile Post	Ownership	Active Warning System Equipment	Activation Equipment Type
Oil Jail Lane	72.69	Public	Flashers	Motion Sensor (Model 62585)
Pine Lane	72.92	Public	Flashers	Motion Sensor (Model 62585)
Railroad Avenue	72.99	Private	None	None
Hyannis Road	73.25	Public	Flashers/Gates	Programmable (2000 model)
Braggs Lane	73.57	Public	Flashers (Gates to be Installed)	Motion Sensor (Model 62585)
County Farm	73.90	Private	None	None
Mary Dunn Road	74.15	Public	Flashers(Gates being Installed)	Motion Sensor (Model 62585)
Marstons Lane	75.28	Public	Flashers/Gates	Motion Sensor (Model 62585)
Oak Avenue	76.85	Public	Flashers/Gates	Motion Sensor (Model 62585)
Manning Way (Airport Access)	77.30	Private	Fenced/Gated	None
Route 28	78.50	Public	Flashers/Gates	Motion Sensor (Model 62585)

Crossing Surfaces

The Cape Main Line contains a total of 33 public at-grade crossings, as listed above, and among that total, there are a number of crossings with crossing surfaces in fair and/or poor condition. Along the Buzzards Bay Secondary, there are eight at-grade crossings identified as being near their end of useful life. Four out of those eight crossings, which are listed below, were identified as areas of immediate concern due to their poor condition.

Buzzards Bay Secondary: At-Grade Crossings in Fair/Poor Condition

Location	Street	Surface	Condition
MP 39.51	Miller Street	Timber and Asphalt	Poor
MP 41.65	Spruce Street	Timber and Asphalt	Poor
MP 44.87	County Road	Asphalt	Fair
MP 47.19	Station Street	Timber and Asphalt	Fair
MP 47.79	Hathaway Road	Timber and Asphalt	Fair
MP 49.47	Sandwich Road (Rt. 6)	Full Depth Rubber	Fair
MP 52.68	Main Avenue	Timber and Asphalt	Poor
MP 54.60	Academy Drive	Timber and Asphalt	Poor

The Hyannis Secondary line contains six at-grade crossings, listed below, which are identified as being in poor condition. An at-grade crossing improvement program is currently underway along the corridor, which includes the installation of new crossing surfaces at five out of these six crossing locations. This program includes Old County Road, Maple Street and Willow Street in Sandwich, and Braggs Lane and Mary Dunn Road in Barnstable.

Hyannis Secondary: At-Grade Crossings in Fair/Poor Condition

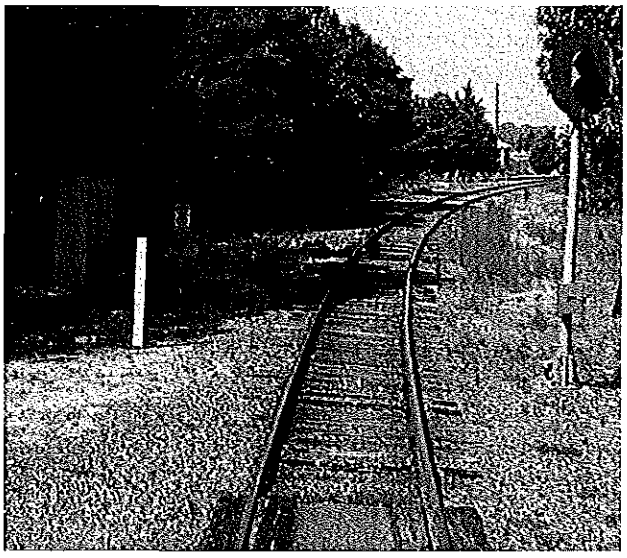
Location	Street	Surface	Condition
MP 62.28	Liberty Street	Timber and Asphalt	Poor.
MP 65.76	Old County Road	Timber and Asphalt	Poor; Wide Gage Issues; Included in Grade Crossing Improvement Program.
MP 68.54	Maple Street	Timber and Asphalt	Poor; Wide Gage Issues; Included in Grade Crossing Improvement Program.
MP 69.10	Willow Street	Timber and Asphalt	Poor; Included in Grade Crossing Improvement Program.
MP 73.57	Braggs Lane	Timber and Asphalt	Poor; Included in Grade Crossing Improvement Program.
MP 74.15	Mary Dunn Road	Timber and Asphalt	Poor; Bad Planks; Included in Grade Crossing Improvement Program.

Signals

The MBTA has a train control signal system along the line between Middleborough and South Station that ends at the signal known as "Bay", which is located approximately 0.7 miles south of the Middleborough Station platform. Train operations between Bay and Hyannis are operated using Form D operations, known as a manual block operation, where train movement is controlled using a check in/check out system between the train operator and the Mass Coastal dispatcher who controls the movement of trains along specified segments of track, or blocks.

At Buzzards Bay, where the railroad goes over the Canal, there is a signal controlled system of the vertical bridge that is operated by the US ACOE.

Cape Cod Canal Bridge Approach Signal



As part of the line upgrade that occurred in 1986 in support of the Amtrak *Cape Codder,* the installation of a new wayside automatic block signal system was planned and initiated but never completed. Signal masts, signal heads, signal cases, along with an office control system were installed. However, the final wiring was never completed and the system was never cutover or put in service. Given that the equipment has been sitting unused and not maintained for the past 25 years, significant deterioration has occurred.

There are at least 31 wayside signal cases and 2 bungalows along the line still in existence. Much of the signal equipment still remains in the cases, including the microprocessors and battery backup systems. However, the age of the systems and their lack of use would most likely necessitate their full replacement prior to use. The wiring in the cases and to the signal system's field equipment has either been removed, never installed or has deteriorated to the point of making it non-useable. In general, most of the signal cases could be reused, but most of the signal equipment inside and all of the wiring would require

replacement. In addition, the signal masts that are installed are still in good condition and could be reused, however, approximately 50 percent of the masts do not have signal heads. All of the power to the cases has been disconnected except for the signal cases that also shared space with the crossing warning system equipment.

Given the overall condition of the existing equipment, the ability to reuse it for any future wayside signal system is limited, at best, and would not significantly factor in to the overall cost or time required for the installation, testing, and cutover of a new system.

Layover

There is a rail yard in Middleborough located just west of the wye, off of Route 105 and West Clark Street. The yard is used as an MBTA commuter rail layover facility, as well as an interchange point between CSX and Mass Coastal. The yard, as shown in Appendix A, consists of eight total tracks, with six utilized for the layover facility and two designated for CSX. The six layover tracks are used for overnight storage and servicing of the Middleborough/Lakeville line commuter trains, and each have the capacity to store a nine car train. The CSX trains are stored on the northernmost track, which is called the Alden Siding, while the adjacent track continues west to Taunton.

The Hyannis Yard is located in the Town of Barnstable off of Route 28 and west of Yarmouth Road. The Yard Limits extend from a half mile north of the Route 28 at-grade crossing at MP 78.0 to the end of the Cape Main Line, just north of Main Street at MP 79.0. The yard consists of eight tracks, including the mainline, with the southernmost switch located approximately 420 feet from the end of the Cape Main Line. There are two tracks intersecting Route 28, as the switch is located approximately 220 feet north of the at-grade crossing. The yard contains two tracks to the east of the Cape Main Line and five to the west. There is also an engine house (approximately 120 feet by 35 feet) located on one of the tracks, which is used for maintenance of the CCCRR tourist trains.

The configuration of Hyannis Yard is shown in Appendix B. The tracks to the east of the mainline include Track 6, which has a capacity of approximately 815 feet and Track 8, which has a total capacity of 600 feet, but is bisected by an at-grade crossing providing access to the inner tracks. The track capacity south of the crossing is approximately 320 feet and 255 feet north of the crossing. The five tracks located west of the mainline include Track 5, Track 7, Track 9, the maintenance track, and the RIP track. The capacity of Track 5 is approximately 750 feet, and Track 7 is approximately 950 feet in length. The total track capacity of Track 9 is approximately 1,125 feet, but it is also bisected by an at-grade crossing providing access to the inner tracks. The track capacity south of the crossing is about 565 feet and 540 feet north of the crossing. The approximate length of the maintenance track, which contains the engine house building, is 220 feet. Lastly, the westernmost track, identified as RIP track on the attached figure, is about 230 feet long.

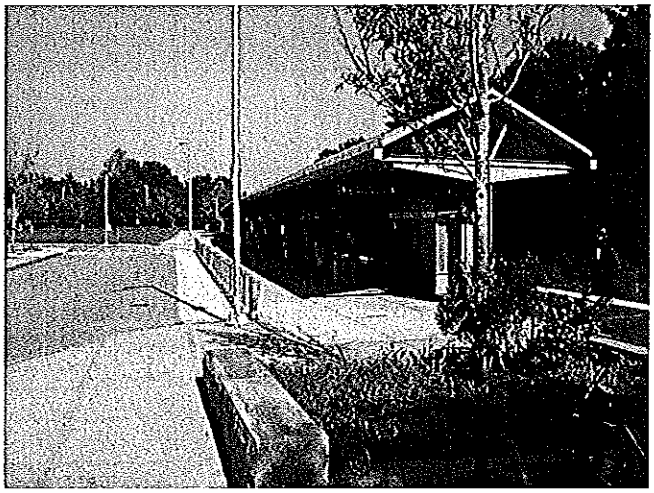
Stations

Middleborough Station

Middleborough Station is located in the Town of Lakeville, on the northern side of Commercial Drive. The station straddles the Middleborough/Lakeville town line off of Route 105. The station area includes a high-level platform with an overhead canopy and parking. Middleborough Station is the terminus of the MBTA's Old Colony - Middleborough/Lakeville Commuter Rail Line, which provides service into Boston's South Station.

The station is located about 0.75 miles south of Bay (MP 36.3), which is the northernmost point of the Cape Main Line. There is a single track running through the station on the east, with a wye switch located approximately 575 feet north of the end of the station platform. The MBTA's commuter rail layover facility in Middleborough is located just west of the wye, off of Route 105 and West Clark Street.

Middleborough Station



The station platform is approximately 835 feet long, the standard MBTA platform length, which accommodates a nine car train. The high-level concrete platform has a yellow tactile edge and is fully ADA accessible. The overhead canopy is located about 230 feet from the southern edge of the platform, and is approximately 240 feet long. The Middleborough Station also includes LED passenger train information signs on the platform.

Adjacent to the station platform there are 769 parking spaces, including 14 accessible spaces and 8 bike spaces, as well as a drop off access road adjacent to the platform. The station also accommodates the Greater Attleboro Taunton Regional Transit Authority bus service which operates from the MBTA station through Lakeville, Middleborough and Wareham.

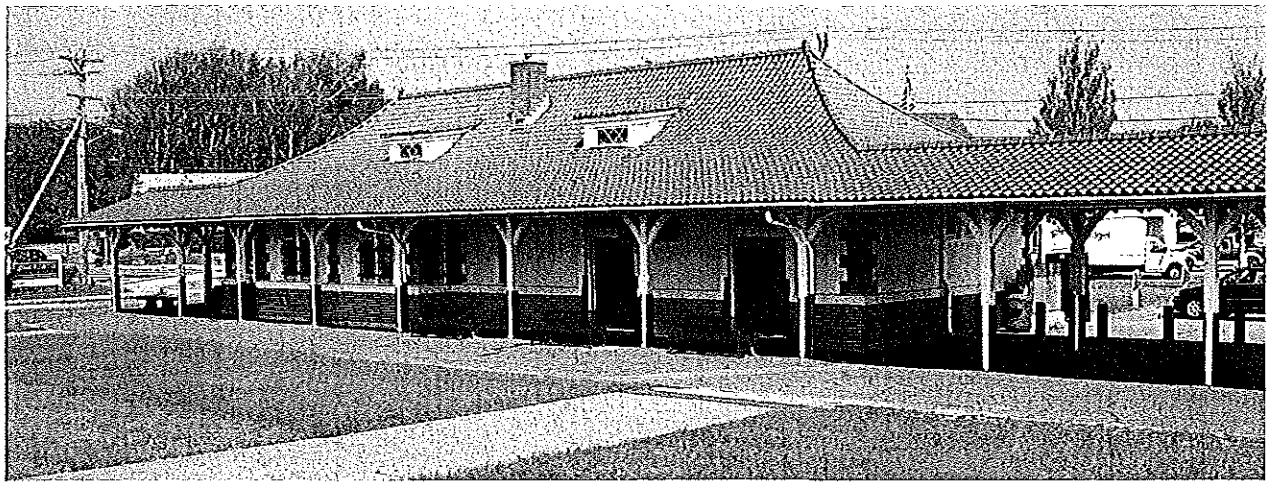
Buzzards Bay Station

There is currently a train station at Buzzards Bay, a village in the town of Bourne, located on the south side of Main Street at Academy Drive. The station includes a station building, a low-level platform, a mini-high platform for wheelchair access, and parking. Buzzards Bay Station is now the westernmost stop on CCCRR's dinner train service, which operates from May through October. The facilities were also regularly used for Amtrak's summer weekend service, which ran from 1986 to 1996.

The station is located within the Yard Limits of the Buzzards Bay Yard which extends from Buttermilk at MP 53.8 to the Cape Cod Canal Bridge at MP 54.6. The station platform is located approximately 500 feet south of the southern switch to the Buzzards Bay Siding. There is a single track running through the station with a siding on the west that provides access to US ACOE property. The switch for the siding is approximately in the middle of the length of the platform.

The station platform is approximately 835 feet long, the standard MBTA platform length, which accommodates a nine car train. However, the platform is bisected by Academy Drive, with 475 feet to the south and 310 feet to the north of the at-grade crossing. The platform can accommodate a five car train without impacting access to Academy Drive. The platform is a low-level bituminous concrete platform with a painted yellow platform edge. In addition to the low-level platform there is a mini-high level platform, approximately 65 feet long, located near the southern end of the platform. This mini-high platform includes an accessible ramp, thereby enabling level accessible boarding to the first coach of the train. This is consistent with the accessibility configuration of many MBTA commuter rail services and stations.

Buzzards Bay Station



The former station building is now home to the Cape Cod Canal Region Chamber of Commerce and their Buzzards Bay Information Center. In addition, the former railroad control tower's building structure is currently in the process of being restored.

Adjacent to the station platform, there are approximately 60 parking spaces, including at least two handicapped spaces, located near the access to the mini-high platform. The parking is currently used by visitors and employees of the Information Center, patrons of the CCCRR dinner train, and visitors to the adjacent park and the Buzzards Bay Recreation Area and trail along the canal.

Hyannis Station

Hyannis Station is located on the northern side of the intersection of Main Street and Center Street in Hyannis, which is the largest village in the Town of Barnstable. The station area includes a station building, the Hyannis Transportation Center, two low-level platforms, an overhead canopy on one of the platforms, a mini-high platform for wheelchair access, and parking. The Hyannis Station is the southernmost stop on the CCCRR's dinner and excursion train service. Until 1996, the Hyannis Station served as a terminal for Amtrak's summer weekend service called the *Cape Codder.*

The station is located within the Yard Limits of the Hyannis Yard which extend from MP 78.0 to MP 79.0. The yard encompasses the area a half mile north of the Route 28 at-grade crossing (MP 78.5) to the end of the Cape Main Line (MP 79.0), located north of Main Street. There is a single main line track running through the station area, with the station building, one low level platform and an overhead canopy on the east side, and another low level platform and a mini high platform on the west.

The station platform on the east side of the mainline is approximately 645 feet long, which accommodates a seven car train. The platform is a low-level bituminous concrete platform with a painted yellow platform edge and an overhead canopy. The overhead canopy is approximately 70 feet long and located at the southern end of the platform. The Hyannis Station building located on the east side of the tracks is approximately 50 feet by 75 feet in size, and is currently used by the CCCRR for boarding tourists and dinner train passengers, selling tickets, dispensing information, and administrative offices. Adjacent to the station and platform, there are approximately 90 parking spaces.

Direct access between the Hyannis Station and platform on the east side and the Hyannis Transportation Center and the platforms on the west side of the track is impeded by a fence installed near the end of the track.

The platform on the west side of the track is approximately 165 feet long, which accommodates one full car length, however it is currently fenced off and is not accessible. In addition to the low-level platform there is a mini-high level platform, approximately 65 feet long, located about 35 feet north of the low level platform on the west side of the mainline. This mini-high platform includes an accessible ramp, thereby enabling level accessible boarding to the train.

The mini high platform is accessed through a walkway from the Hyannis Transportation Center building area. From the Hyannis Transportation Center, rail passengers can transfer to local and intercity bus service, as well as make connections to air and ferry service. This center accommodates bus lines such as Plymouth & Brockton, Peter Pan, and the CCRTA local bus service. The Steamship Authority will send over a shuttle bus to pick up passengers on demand from the Center for connection to the ferry service. The Transportation Center building functions as a passenger waiting area and houses administrative offices for the CCRTA. North of the building, there are three long term overnight parking lots, which accommodate 160 vehicles.

Operations/Schedule

MBTA Service

The MBTA operates commuter rail service between Boston's South Station and the Middleborough/Lakeville Station each day. The service makes seven to eight intermediate station stops between the two terminal stations. The total trip typically takes approximately 61 minutes. The corridor is presently undergoing a tie rehabilitation project for which four minutes has been added to the scheduled travel time of each trip. The tie rehabilitation project is anticipated to be completed before the end of 2011. Upon completion it is anticipated that the service schedule will return to its pre-construction schedule. The existing schedule for service is included in Appendix C.

The service to Middleborough is operated as part of the Old Colony Line service. These three lines, Greenbush Line, Plymouth/Kingston Line, and Middleborough/Lakeville Line are operated in a coordinated fashion. Twelve trainsets are dedicated to these three lines and rarely run on the other lines on the MBTA network. These trainsets are "captive" on the Old Colony Lines because the train doors are all coordinated to open, eliminating the need to manually open each door, which is not done on other MBTA lines due to station platform height issues.

The Old Colony trainsets are presently all configured to accommodate at least 882 seated passengers, with some longer trains providing 1014 seats. The train sets are made up of three single-level coaches and three bi-level coaches or one single level coach and five bi-level coaches. None of the evening trains operating to Middleborough are nearing capacity. The most crowded southbound train to Middleborough (#021) still has over 250 available seats, on average.

Cape Rail Freight Service

Freight Rail service operates on the line between Middleborough and Yarmouth Junction six days a week (Monday through Saturday) primarily providing service to and from the SEMASS Resource Recovery Facility in Rochester, MA. The following describes the typical rail service on Fridays and Saturdays, as there are no regularly scheduled freight trains on Sundays.

On Friday, there are two southbound trains and two northbound trains operating on the section between SEMASS and Buzzards Bay. The southbound trains depart SEMASS at approximately 6:30 AM and 1 PM. The northbound trains depart Buzzards Bay at approximately 4:15 PM and 5:15 PM. On Saturday, the only train that operates on this segment is the one that departs SEMASS at 6:30 AM.

On the segment between the Cape Cod Canal Bridge and Yarmouth Junction there is only one train on Friday, which operates northbound departing Yarmouth Junction for the 1 hour trip to the Cape Cod Canal Bridge at about 4:15 PM. On Saturday, there are two southbound trips on this segment with one heading south from the Cape Cod Canal Bridge at about 7:30 AM and the second at about 9:30 AM.

Cape Cod Central Railroad

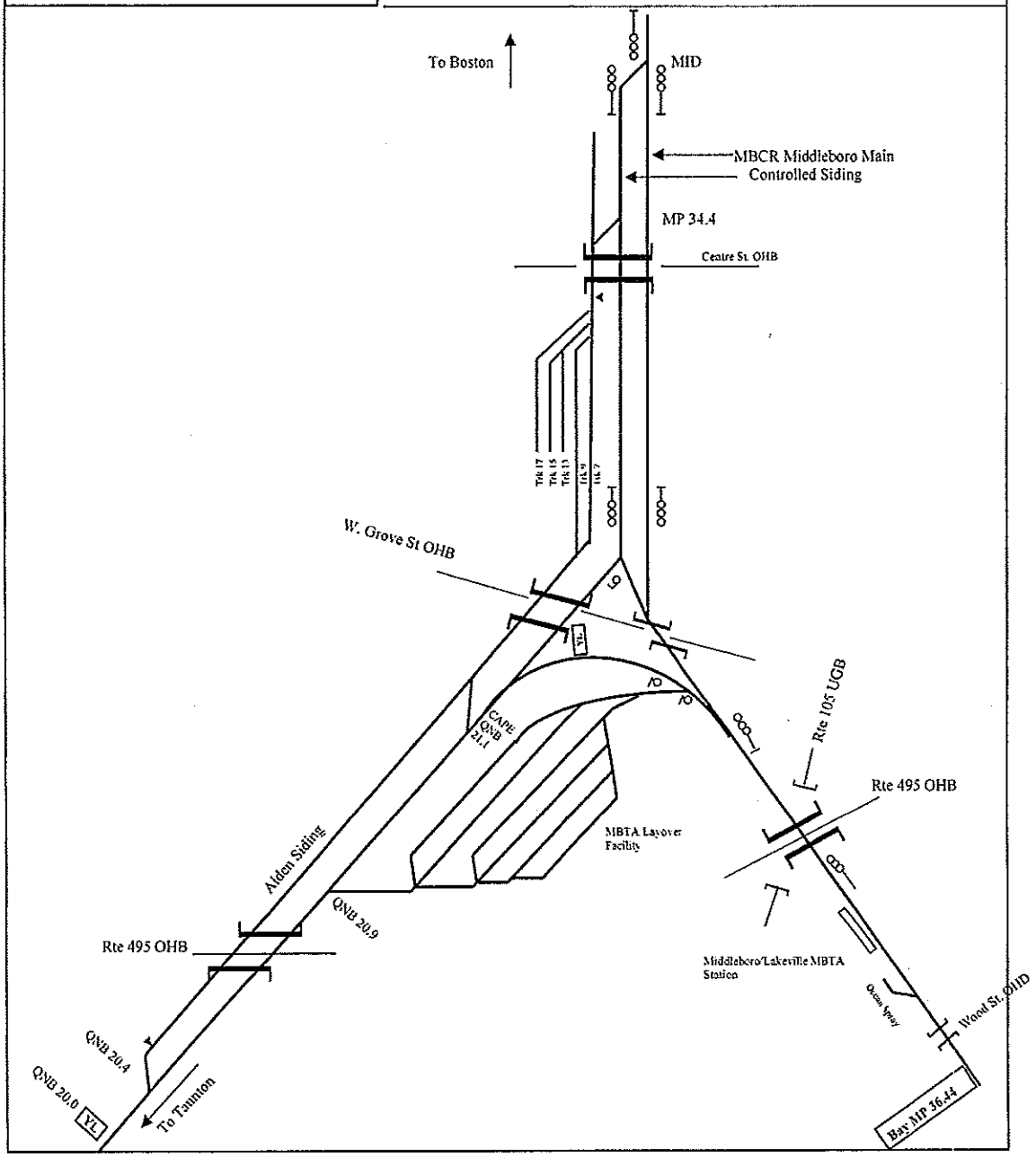
The CCCRR operates excursion services along the corridor. The regularly scheduled trips operate on segments between Buzzards Bay Station and Hyannis Station. They operate numerous different packages, ranging from an "Elegant Dinner Train" to a "Narrated Scenic Train". The schedule for these trains is not consistent each month of the year, with the railroad providing different trips to accommodate different seasonal variations. The following is the general schedule of operations for services during the 2011 summer season.

On Friday, their service consists primarily of a train departing southbound from Buzzards Bay Station at 6:30 PM, traveling to West Barnstable before returning. The return trip departs at 8 PM +/- :15 min. depending on the type of trip it is. On Saturday, the services are much more frequent with multiple trains making the two-hour round trip between Hyannis Station and the Cape Cod Canal Bridge. Trains depart Hyannis Station at 11:30 AM, 2:30 PM and 6:30 PM. In addition, a train operates between West Barnstable and the Cape Cod Canal Bridge and back, departing West Barnstable at 7 PM. The service on Sunday is generally limited to a Brunch train that departs Hyannis Station at 11:30AM for the two hour round trip to the Cape Cod Canal Bridge.

Appendix A

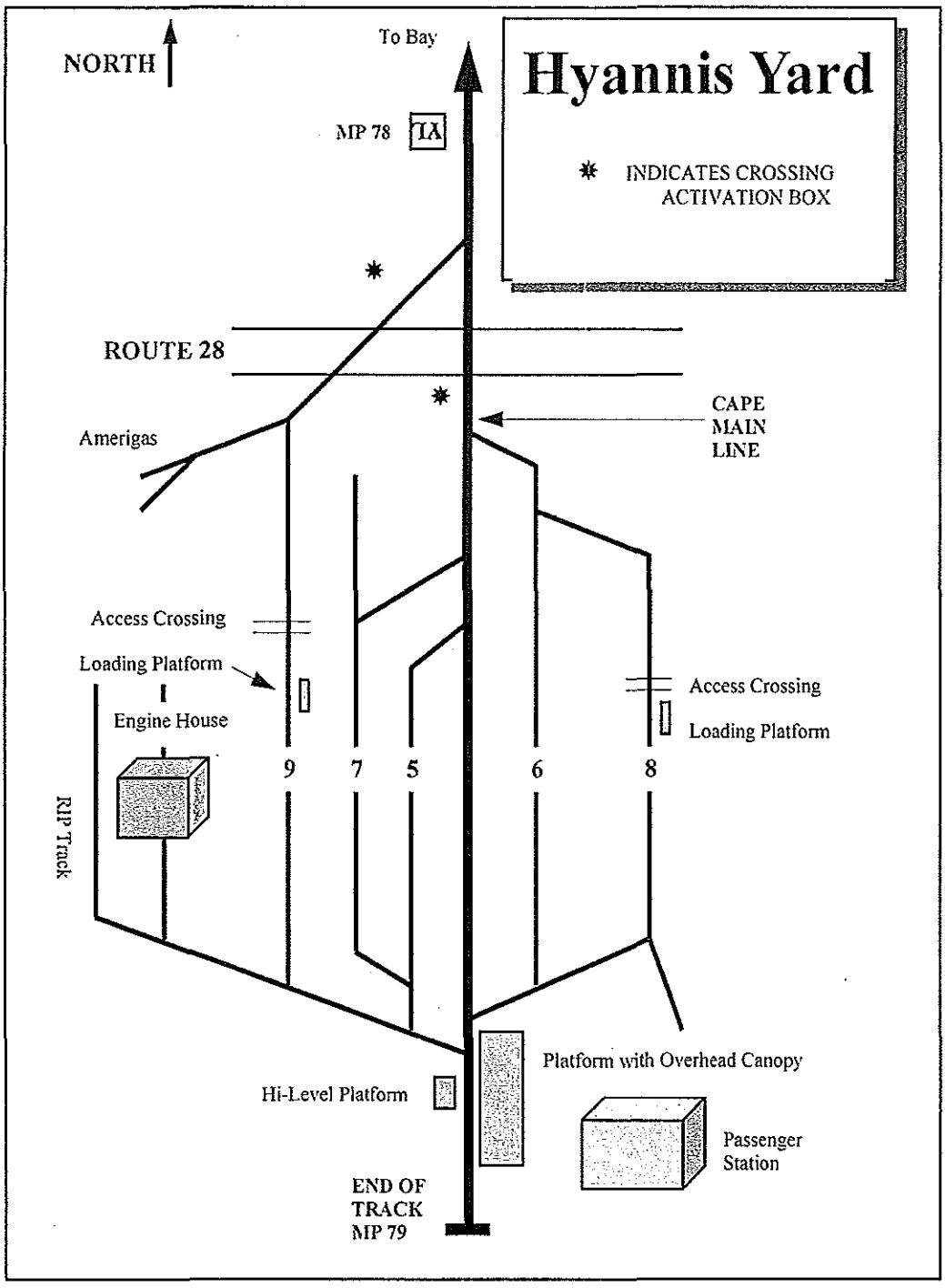
MBCR Territory
BAY to MID including
CSX Middleboro Yard

Informational Purposes Only



Middleborough Yard
Source: Massachusetts Coastal Railroad Timetable No. 3

Appendix B



Hyannis Yard
Source: Massachusetts Coastal Railroad Timetable No. 3

Appendix C

Old Colony Line Temporary Schedule: Effective September 19, 2011

Replaces the temporary schedule of August 1, 2011

Monday through Friday

Inbound to South Station

Train No.	002 AM	032 AM	004 AM	034 PM	006 AM	036 PM	008 AM	038 AM	010 AM	040 AM	012 AM	060 AM	014 AM	062 PM	016 PM	064 PM	018 PM	048 PM	020 PM	022 PM	052 PM	066 PM	056 PM	028 PM
Plymouth	---	---	---	---	---	---	---	---	---	---	---	10 40	---	12 06	---	2 22	---	---	---	---	---	8 05	---	---
Kingston	---	5 22	---	6 09	---	7 07	---	7 32	---	8 30	---	10 05	---	---	---	1 35	---	3 57	---	---	6 17	7 33	8 47	---
Halifax	---	5 33	---	6 20	---	7 18	---	7 43	---	8 41	---	10 51	---	12 17	---	2 33	---	4 08	---	---	6 28	8 16	8 58	---
Hanson	---	5 39	---	6 26	---	7 24	---	7 49	---	8 47	---	10 57	---	12 23	---	2 39	---	4 14	---	---	6 34	8 22	9 04	---
Whitman	---	5 45	---	6 32	---	7 31	---	7 56	---	8 54	---	11 04	---	12 30	---	2 45	---	4 21	---	---	6 41	8 29	9 11	---
Abington	---	5 49	---	6 36	---	7 35	---	8 00	---	8 58	---	11 08	---	12 34	---	2 50	---	4 25	---	---	6 45	8 33	9 15	---
South Weymouth	---	5 55	---	6 42	---	7 42	---	8 05	---	9 04	---	11 14	---	12 40	---	2 56	---	4 31	---	---	6 51	8 39	9 21	---
Middleborough/Lakeville	5 10	---	5 50	---	6 50	---	7 15	---	8 00	---	9 45	---	11 15	---	1 14	---	3 14	---	4 54	6 10	---	---	---	9 25
Bridgewater	5 21	---	6 01	---	7 01	---	7 26	---	8 11	---	9 56	---	11 26	---	1 25	---	3 25	---	5 05	6 21	---	---	---	9 36
Campello	5 30	---	6 10	---	7 10	---	7 35	---	8 20	---	10 05	---	11 35	---	1 34	---	3 34	---	f5 14	f6 30	---	---	---	9 45
Brockton	5 35	---	6 15	---	7 15	---	7 40	---	8 25	---	10 10	---	11 40	---	1 39	---	3 39	---	f5 19	f6 35	---	---	---	9 50
Montello	5 38	---	6 18	---	7 18	---	7 43	---	8 28	---	10 13	---	11 43	---	1 42	---	3 42	---	f5 22	f6 38	---	---	---	9 53
Holbrook/Randolph	5 44	---	6 24	---	7 24	---	7 49	---	8 34	---	10 19	---	11 49	---	1 48	---	3 48	---	f5 28	f6 44	---	---	---	9 59
Braintree	L5 52	---	---	L6 51	---	L7 51	---	L8 15	L8 42	L9 13	---	L11 23	---	L12 49	L1 56	L3 05	L3 56	L4 39	L5 42	f6 52	L6 59	L8 47	L9 29	L10 07
Quincy Center	---	---	L6 38	---	L7 39	---	L8 04	---	---	---	L10 34	---	L12 03	---	L2 02	---	---	---	---	---	---	---	---	L10 14
JFK/UMASS	L6 07	L6 18	---	---	L7 43	L8 04	L8 13	L8 35	L8 58	L9 26	---	---	---	L1 00	---	---	---	---	---	---	---	---	---	---
SOUTH STATION	6 15	6 26	6 55	7 13	7 56	8 12	8 21	8 36	9 06	9 34	10 52	11 44	12 21	1 10	2 20	3 26	4 20	5 03	6 07	7 15	7 29	9 08	9 50	10 30

Outbound from South Station

Train No.	003 AM	033 AM	005 AM	061 AM	007 AM	063 AM	009 AM	065 PM	015 PM	041 PM	017 PM	043 PM	019 PM	045 PM	021 PM	047 PM	023 PM	067 PM	025 PM	051 PM	027 PM	055 PM	029 PM	057 PM
SOUTH STATION	6 35	7 11	8 24	8 56	9 57	10 50	11 57	12 25	1 55	2 45	3 38	4 20	4 40	5 00	5 12	5 38	5 57	6 20	6 52	7 29	8 07	9 30	10 30	10 45
JFK/UMASS	---	---	---	---	---	---	---	---	---	2 51	3 45	4 26	---	5 06	---	---	6 03	---	---	---	8 14	9 37	---	10 51
Quincy Center	L6 49	---	---	9 10	10 11	---	12 11	---	2 09	---	3 53	---	4 53	---	5 26	5 52	6 11	---	7 06	---	8 22	---	10 44	---
Braintree	L6 55	L7 32	L8 44	9 15	---	11 09	---	12 44	---	3 05	---	4 49	---	5 20	---	5 58	---	6 39	---	7 48	---	9 50	---	11 04
Holbrook/Randolph	f7 04	---	8 53	---	10 25	---	12 25	---	2 23	---	4 07	---	5 07	---	5 40	---	6 25	---	7 20	---	8 36	---	10 58	---
Montello	f7 10	---	8 59	---	10 31	---	12 31	---	2 29	---	4 13	---	5 13	---	5 46	---	6 31	---	7 26	---	8 42	---	11 04	---
Brockton	f7 13	---	9 02	---	10 34	---	12 34	---	2 32	---	4 16	---	5 16	---	5 49	---	6 34	---	7 29	---	8 45	---	11 07	---
Campello	7 18	---	9 07	---	10 39	---	12 39	---	2 37	---	4 21	---	5 21	---	5 54	---	6 39	---	7 34	---	8 50	---	11 12	---
Bridgewater	L7 33	---	L9 16	---	L10 43	---	L12 43	---	L2 46	---	L4 30	---	L5 30	---	L6 03	---	L6 48	---	L7 43	---	L8 59	---	L11 21	---
Middleborough/Lakeville	7 47	---	9 30	---	11 02	---	1 02	---	3 02	---	4 44	---	5 41	---	6 17	---	7 02	---	7 57	---	9 13	---	11 35	---
South Weymouth	---	L7 40	---	9 23	---	11 17	---	12 52	---	3 13	---	4 43	---	5 28	---	6 06	---	6 47	---	7 56	---	9 58	---	11 12
Abington	---	7 46	---	9 29	---	11 23	---	12 58	---	3 19	---	4 54	---	5 34	---	6 12	---	6 53	---	8 02	---	10 04	---	11 18
Whitman	---	7 49	---	9 33	---	11 27	---	1 02	---	3 23	---	4 58	---	5 38	---	6 16	---	6 57	---	8 06	---	10 08	---	11 22
Hanson	---	7 55	---	9 39	---	11 33	---	1 08	---	3 29	---	5 05	---	5 45	---	6 23	---	7 04	---	8 12	---	10 14	---	11 28
Halifax	---	L8 01	---	L9 45	---	L11 39	---	L1 14	---	L3 35	---	L5 11	---	L5 51	---	L6 29	---	L7 10	---	L8 18	---	L10 20	---	L11 34
Kingston	---	8 13	---	9 57	---	---	---	1 26	---	3 47	---	5 24	---	6 04	---	6 42	---	7 23	---	8 32	---	10 34	---	11 43
Plymouth	---	---	---	10 23	---	11 53	---	1 52	---	---	---	---	---	---	---	---	---	7 49	---	---	---	---	---	---

Source: MBTA

Middleborough/Lakeville Line Schedule Saturday-Sunday

Middleborough/Lakeville Weekend Inbound

	AM	AM	AM	PM	PM	PM	PM	PM
Dep: Middleborough/Lakeville	6:30	7:53	10:10	12:40	1:55	3:45	7:05	9:36
Bridgewater	6:41	8:04	10:21	12:51	2:06	3:56	7:10	9:47
Campello	6:50	8:13	10:30	1:03	2:15	4:05	7:25	9:56
Brockton	6:55	8:18	10:35	1:08	2:20	4:10	7:30	10:01
Montello	6:58	8:21	10:38	1:11	2:23	4:13	7:33	10:04
Holbrook/Randolph	7:04	8:27	10:44	1:17	2:29	4:19	7:39	10:10
Braintree	7:12		10:52		2:37			
Quincy Center	7:18	8:41	10:58	1:31	2:43	4:33	7:53	10:23
JFK/UMASS	7:27	8:50	11:07	1:40	2:52	4:42	8:02	10:32
Arr: South Station	7:35	8:58	11:15	1:48	3:00	4:50	8:10	10:40

Middleborough/Lakeville Weekend Outbound

	AM	AM	PM	PM	PM	PM	PM	PM
Dep: South Station	8:15	11:15	12:30	2:17	3:30	5:35	8:20	10:50
JFK/UMASS	8:22	11:22	12:37	2:24	3:37	5:42	8:27	10:57
Quincy Center	8:30	11:30	12:45	2:32	3:45	5:50	8:35	11:05
Braintree	8:35		12:50		3:50	5:55		
Holbrook/Randolph	8:44	11:44	1:03	2:46	3:59	6:04	8:49	11:19
Montello	8:50	11:50	1:09	2:52	4:05	6:10	8:55	11:25
Brockton	8:53	11:53	1:12	2:55	4:08	6:13	8:58	11:28
Campello	8:58	11:58	1:17	3:00	4:13	6:18	9:03	11:33
Bridgewater	9:07	12:07	1:26	3:09	4:22	6:27	9:12	11:42
Arr: Middleborough/Lakeville	9:21	12:21	1:40	3:25	4:38	6:41	9:26	11:56

2010 MBTA Schedule
Source: MBTA

Cape Cod Seasonal Rail Planning Study

Operating and Maintenance Costs Memorandum

Operating and Maintenance Cost Estimates

HDR has developed operating and maintenance cost estimates for the Cape Cod Seasonal Rail Service. Two sets of estimates were developed. One estimate includes a single round trip between Middleboro and Hyannis on each operating day (Friday, Saturday and Sunday) during the 13 week summer seasons. The other estimate includes a second round trip on Friday and Sunday with just the single round trip on Saturday.

HDR developed the costs based on the proposed operating plan and the latest available operating costs from the MBTA. The following are the assumptions utilized in the development of the estimates:

Transportation - This cost category includes the cost of train crews

- Use of an MBTA Engineer, Conductor, and Asst. Conductor between Middleboro and Hyannis
- An MCRR pilot would be used on the Cape Main Line
- In the case of multiple round trips per day, the train crew would remain with the train for any non-revenue moves (i.e. back to Middleboro on Friday evenings).

Fuel – This cost category includes the cost of fuel for the trains

- MBTA 2010 fuel costs were used, escalated and projected to reflect estimated diesel fuel costs for summer of 2012.

Mechanical – This cost category includes the incremental cost of vehicle maintenance.

- Incremental cost of vehicle maintenance is consistent with MBTA per mile average.

Trackage, MOW, Dispatching – This includes the costs for use of the Cape Main Line.

- The car mile fee charged by MCRR for use of the line covers all MCRR incremental costs.

Insurance – It is assumed there will be no incremental insurance costs resulting from the service.

Bridge Operation – There have not been any costs included associated with the operation of the Cape Cod Canal Bridge. Any bridge operations costs would be in addition to the estimates provided below.

O&M Cost Estimate for Cape Cod Seasonal Rail Service (with 1 Round Trip Each Operating Day)

Cost Category	Seasonal Cost
Transportation	$ 91,029
Material & Fuel	$ 35,418
Mechanical	$ 52,289
Trackage, MOW, Dispatching	$ 11,152
Insurance	$ 0
Seasonal Total	**$ 189,888**

O&M Cost Estimate for Cape Cod Seasonal Rail Service (with 2 Round Trips on Friday/Sunday)

Cost Category	Seasonal Cost
Transportation	$ 153,586
Material & Fuel	$ 59,030
Mechanical	$ 87,148
Trackage, MOW, Dispatching	$ 18,587
Insurance	$ 0
Seasonal Total	**$ 318,351**

CCRTA Seasonal Train Service from Middleborough to Hyannis

Year 1

ITEM	DESCRIPTION	UNIT	UNIT COST	QUANTITY	CONSTRUCTION COST	RR Activity
A	**Grading and Track Work**					
1	***Cut and Chip Brush Along Right-of-Way***					
1a	Buzzards Bay Secondary (Mileage 36.3 - 54.7 = 18.4)	Mile	$5,000.00	0.0	$0	x
1b	Hyannis Secondary (Mileage 54.9 - 79.0 = 24.1)	Mile	$5,000.00	0.0	$0	x
2	***Cut Brush At Grade Crossing Quadrants***					
2a	Buzzards Bay Secondary (Mileage 36.3 - 54.7 = 18.4)	Each	$4,000.00	7	$28,000	x
2b	Hyannis Secondary (Mileage 54.9 - 79.0 = 24.1)	Each	$4,000.00	20	$80,000	x
3	***Excavate Ditches and Disposal of Materials (RR Standard Ditch)***					
3a	Buzzards Bay Secondary (Mileage 36.3 - 54.7 = 18.4)	LF	$16.00	2,640	$42,240	x
3b	Hyannis Secondary (Mileage 54.9 - 79.0 = 24.1)	LF	$16.00	2,640	$42,240	x
3c	Install Culvert (36" Max.)	Each	$25,000.00	1	$25,000	x
4	***Furnish and Install Erosion Control Silt Fence/Hay Bales (Support for Item 3)***					
4a	Buzzards Bay Secondary (Mileage 36.3 - 54.7 = 18.4)	LF	$15.00	250	$3,750	x
4b	Hyannis Secondary (Mileage 54.9 - 79.0 = 24.1)	LF	$15.00	250	$3,750	x
5	***Surface and Align Track: To Support Track Repair***					
5a	Buzzards Bay Secondary (Mileage 36.3 - 54.7 = 18.4) (53.7-54.9=1.2)	TF	$1.25	6,336	$7,920	
5b	Hyannis Secondary (Mileage 54.9 - 79.0 = 24.1)	TF	$1.25	127,248	$159,060	
6	***Furnish and Place Ballast: In Preparation for Aligning and Surfacing Track***					
6a	Buzzards Bay Secondary (5 miles, 250 tons/mile)	Tons	$25.00	1,250	$31,250	
6b	Hyannis Secondary (Mileage 54.9 - 79.0 = 24.1) (300 tons/mile)	Tons	$25.00	7,230	$180,750	
7	***Provide Work Trains: Distribute Ballast and Ties (See Items 6 & 8)***					
7a	Buzzards Bay Secondary (Mileage 36.3 - 54.7 = 18.4) (Ties)	Each	$3,500.00	1	$3,500	
7b	Hyannis Secondary (Mileage 54.9 - 79.0 = 24.1) (Ties)	Each	$3,500.00	6	$21,000	
7c	Buzzards Bay Secondary (Mileage 36.3 - 54.7 = 18.4) (Ballast)	Each	$3,500.00	2	$7,000	
7d	Hyannis Secondary (Mileage 54.9 - 79.0 = 24.1) (Ballast)	Each	$3,500.00	8	$28,000	
8	***Furnish and Install New Ties***					
8a	Buzzards Bay Secondary (Mileage 53.7 - 54.9 = 1.2) 6 ties/rail = 814/mile	Each	$125.00	1,000	$125,000	
8b	Hyannis Secondary (Mileage 54.9 - 79.0 = 24.1) 6 ties/rail = 814/mile	Each	$125.00	17,800	$2,225,000	
9	***Dispose of Old Ties***					
9a	Buzzards Bay Secondary (Mileage 36.3 - 54.7 = 18.4)	Each	$12.00	1,000	$12,000	
9b	Hyannis Secondary (Mileage 54.9 - 79.0 = 24.1)	Each	$12.00	17,800	$213,600	
10	***Test Rail For Internal Defects***					
10a	Buzzards Bay Secondary (Mileage 36.3 - 54.7 = 18.4) Assume 2 defects	Day	$4,200.00	0.5	$2,100	x
10b	Hyannis Secondary (Mileage 54.9 - 79.0 = 24.1) Assume 3 defects per mile	Day	$4,200.00	2.0	$8,400	x
11	***Furnish and Install Replacement Rail for Defective Rail in CWR (Includes Welds)***					
11a	Buzzards Bay Secondary (Mileage 36.3 - 54.7 = 18.4)	Each	$3,000.00	2	$6,000	x
11b	Hyannis Secondary (Mileage 54.9 - 79.0 = 24.1) (N/A)	Each	$3,000.00	0	$0	x
12	***Furnish and Install Replacement Rail for Defective Rail in Jointed Rail (Includes Welds)***					
12a	Buzzards Bay Secondary (Mileage 36.3 - 54.7 = 18.4) (N/A)	Each	$500.00	0	$0	x
12b	Hyannis Secondary (Mileage 54.9 - 79.0 = 24.1) (3 per mile)	Each	$500.00	72.3	$36,150	x
				Grading and Track Work - Subtotal:	***$3,291,710***	
B	**Structures**					
1	Cohassett Narrows Bridge	LS	$0.00	0	$0	
				Structures - Subtotal:	***$0***	
C	**Hyannis Layover Facility**					
1	Track 8 Rehab.	TF	$75.00	700	$52,500	
1a	Rehab Existing Turnouts	Each	$12,000.00	6	$72,000	
2	Install Fabric under Loco	TF	$25.00	200	$5,000	
3	Drainage	LF	$250.00	0	$0	
4	Oil/Water Separator	Each	$75,000.00	0	$0	
7	Lighting	LS	$50,000.00	0	$0	
				Hyannis Layover Facility - Subtotal:	***$129,500***	

CCRTA Seasonal Train Service from Middleborough to Hyannis
Year 1

ITEM	DESCRIPTION	UNIT	UNIT COST	QUANTITY	CONSTRUCTION COST	RR Activity
D	**Station Repairs and Modifications**					
Middleborough Station						
1	Signage	LS	$5,000.00	1	$5,000	
				Middleborough Station - Subtotal:	$5,000	
Buzzards Bay Station						
1	Install Tactile Edge	LF	$150.00	480	$72,000	
2	Install Benches, Bike Racks, Garbage Cans	LS	$10,000.00	0	$0	
3	Paving	LS	$10,000.00	1.0	$10,000	
4	Signage	LS	$5,000.00	1	$5,000	
				Buzzards Bay Station - Subtotal:	$87,000	
Wareham Station						
1	Install Tactile Edge	LF	$150.00	480	$72,000	
2	Mechanical Lift	LS	$20,000.00	1	$20,000	
3	Paving	LS	$10,000.00	1	$10,000	
4	Signage	LS	$5,000.00	1	$5,000	
				Wareham Station - Subtotal:	$107,000	
Hyannis Station						
1	Extension of Mini-High Platform	LF	$1,500.00	85	$127,500	
2	Install Tactile Edge	LF	$150.00	150	$22,500	
3	Signage	LS	$5,000.00	1	$5,000	
				Hyannis Station - Subtotal:	$155,000	
				Station Repairs & Modifications - Subtotal:	***$354,000***	
E	**Grade Crossings: Active Device Refurbishment**					
1	Grade Crossing Warning System Refurbishment	Each	$1,500.00	33	$49,500	
				Grade Crossings: Active Warning Devices - Subtotal:	***$49,500***	
F	**Grade Crossings: Surfaces**					
1	Furnish and Install Grade Crossing Surface (78' Panels)					
1a	Buzzards Bay Secondary (Mileage 36.3 - 54.7 = 18.4) - Public At-Grade Crossings	Each	$25,000.00	4	$100,000	
1b	Hyannis Secondary (Mileage 54.9 - 79.0 = 24.1) - Public At-Grade Crossings	Each	$40,000.00	2	$80,000	
1c	Hyannis Secondary (Mileage 54.9 - 79.0 = 24.1) - Private At-Grade Crossings	Each	$15,000.00	8	$120,000	
2	Furnish and Install Grade Crossing Painting and Signage in Accordance with MUTCD					
2a	Buzzards Bay Secondary (Mileage 36.3 - 54.7 = 18.4) - Public At-Grade Crossings	Each	$2,500.00	4	$10,000	
2b	Hyannis Secondary (Mileage 54.9 - 79.0 = 24.1) - Public At-Grade Crossings	Each	$2,500.00	2	$5,000	
				Grade Crossings: Surfaces - Subtotal:	***$315,000***	
				ITEMS A THROUGH F - CONSTRUCTION VALUE SUBTOTAL:	***$4,139,710***	
G	**CONTINGENCIES (20% of Construction Value)***	ALL	$1,789,710	20%	$357,942	
* Tie installation contains 0% contingency						
				CONSTRUCTION - SUBTOTAL:	$4,497,652	
H	**Equipment**					
1	Locomotives				$0	
2	Coaches				$0	
				EQUIPMENT - SUBTOTAL:	$0	
I	**Contractor Mobilization (2% of Construction Value)**	ALL	$4,139,710	2%	$82,794	
J	**MassCoastal RR Allowance (Flagging, Const. Mgmt., etc.)**	LS			$250,000	
K	**Environmental/Permitting (1% of Construction Value)**	ALL	$4,139,710	1%	$41,397	
L	**Design Engineering (6% of Construction Value)**	ALL	$4,139,710	6%	$248,383	
M	**Construction Management (4% of Construction Value)**	ALL	$4,139,710	4%	$165,588	
				SOFT COSTS - SUBTOTAL:	$788,162	
				CAPITAL COSTS SUBTOTAL:	**$5,285,814**	
	Project Cost Adjustments					
				Contractor activities performed by MCRR	($369,248) *	
				Railroad tie materials furnished by others	($1,487,080) **	
				CAPITAL COST TOTAL:	**$3,429,486**	

*Includes 20% contingency and soft costs ** Includes 0% contingency and soft costs

Cape Cod Rail Benefits Memorandum

Benefits Estimation Approach

HDR estimated tourist expenditures and environmental benefits associated with the proposed seasonal passenger rail service from Boston's South Station to Hyannis, Massachusetts. This service is anticipated to run 13 weekends of the summer, providing transportation to 16,250 riders each year based on existing ridership projections. The analysis is consistent with the current service plan.

There are two categories of benefits that were estimated:

- *Induced Ridership Benefits:* Tourist expenditure benefits were calculated for those Cape Cod Rail riders who would not have traveled to the Cape except for the availability of passenger rail service. These benefits include induced passenger spending on lodging, food and beverages, entertainment and recreation, and retail purchases.
- *Existing Cape Cod Weekend Travelers:* Emissions benefits and fuel cost savings were estimated for those riders who would have gone to the Cape in the absence of passenger rail service, but opted to take the train rather than drive.

Benefits Due to Implementation of Seasonal Cape Cod Rail Service

Implementation of Cape Cod Rail service during the summer months is likely to generate tourist expenditures.

- $900,000-$1.5 million in tourism dollars could be generated if seasonal Cape Cod Rail service is implemented, based on previous studies and currently available data.
- Nearly 80 percent of these dollars would be spent on lodging and food expenses, based on the 2010 spending patterns of Massachusetts tourists.
- Entertainment, recreation and general retail purchases would likely comprise the remaining 20 percent of Cape Cod visitor spending.

Some current Cape Cod travelers would switch from driving to taking the train, resulting in environmental benefits associated with the new service.

- Carbon dioxide emissions are estimated to decrease by approximately 293 metric tons per year, based on current data.
- Other emissions could also be reduced by roughly 2.7 metric tons total (i.e., CO, NOX, SO2, volatile organic compounds, and particulate matter).
- Total emissions reductions are valued at $12,020 per year, based on existing data.
- Gas consumption could be reduced by nearly 40,000 gallons per year if rail service to the Cape was available.
- These fuel cost savings are estimated to be $115,303 per year.

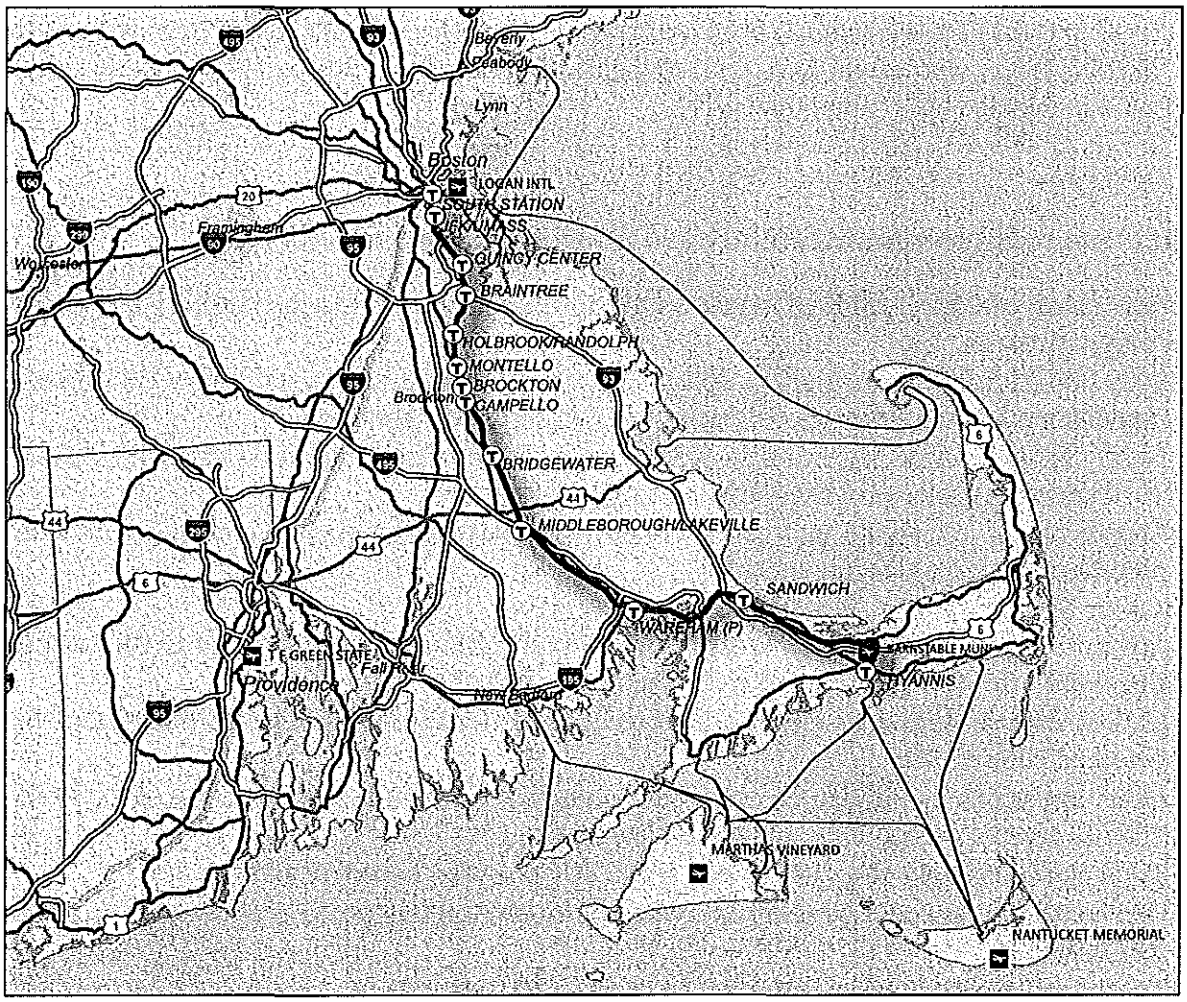
INTERNAL DRAFT

CAPE COD SEASONAL PASSENGER RAIL RIDERSHIP AND SERVICE PLANNING

OVERVIEW

The Cape Cod Regional Transit Authority (CCRTA) is evaluating the potential for passenger rail service between Boston and Hyannis. The proposed service would be seasonal, operating only during peak weekends during July and August. Initially, there would be one train heading south the Cape on Friday afternoon or evening, and a returning trip on Sunday afternoon. Depending the initial ridership, additional trips are possible. The figure below shows a map of the route under consideration, which would basically be an extension of the MBTA's Middleborough Commuter Rail line. There would likely be additional stops in Wareham and Sandwich, and it would terminate at the Hyannis Transportation Center.

FIGURE 1: PROPOSED ROUTE OF CAPE COD SEASONAL PASSENGER RAIL SERVICE



The proposed service has the following general characteristics:

- Seasonal Operation (July and August only),
- Weekend peak hours (Friday evening to Cape / Sunday afternoon return)
- Service will be an extension of current MBTA commuter service from South Station to Middleborough, allowing Cape passengers to board at any intermediate point. Middleborough in particular is conveniently located for suburban rail patrons and has parking available for Cape rail passengers.
- Possible on-board amenities include:
  - Wireless network service
  - Bicycle storage
  - Refreshments
  - Reservations
  - Joint ticketing with ferry operators
- Shorter Travel time and more reliability than the bus or driving as rail bypasses the traffic congestion and slow speeds on highways.

The primary goal of this service is to provide improved peak hour access to the Hyannis area via public transit, and to increase the mode share of public transit for travelers between Boston and Cape Cod, and not simply shift riders who currently use the bus onto the train.

Traffic congestion on the bridges to Cape Cod is notorious, extending for 6 hours or more during peak days. This causes many travelers to shift their trips to less congested times, before or after the peak periods. The parking demand for the ferry terminals is very high on peak weekends, which creates traffic congestion and consumes valuable space. The proposed seasonal passenger rail service could be one element of a multimodal solution to address these problems, and provide more peak hour person-capacity between Boston and Cape Cod on peak summer weekends.

The passenger rail would provide a distinctive new service with unique amenities that can attract people to use public transit who currently drive to the Cape, or do not travel to the Cape at all. This report provides an assessment of the current and proposed travel options, identifies the potential travel markets that would be likely to find the proposed new service attractive, and provides estimates for ridership.

CURRENT TRAVEL PATTERNS

The following sections review the travel data that is available for all modes of transportation generally between Boston and Hyannis to provide a basis for identifying markets for the passenger rail service and estimating ridership.

VEHICLES

Vehicular traffic is clearly the dominant mode of transportation for travelers or residents accessing Cape Cod, and the Massachusetts Department of Transportation. The two bridges that provide highway access to the Cape are the Bourne Bridge and the Sagamore Bridge. While the traffic patterns are quite complex, in general the Sagamore Bridge provides access between Boston and the mid-Cape through outer-Cape. The Bourne Bridge provides access from suburban Boston and points west, and connects destinations in the Falmouth area and to Martha's Vineyard. The following chart shows average Friday southbound traffic and average Sunday northbound traffic crossing each bridge.

FIGURE 2: WEEKEND TRAFFIC PATTERNS ON THE SAGAMORE BRIDGE BY MONTH, 2010

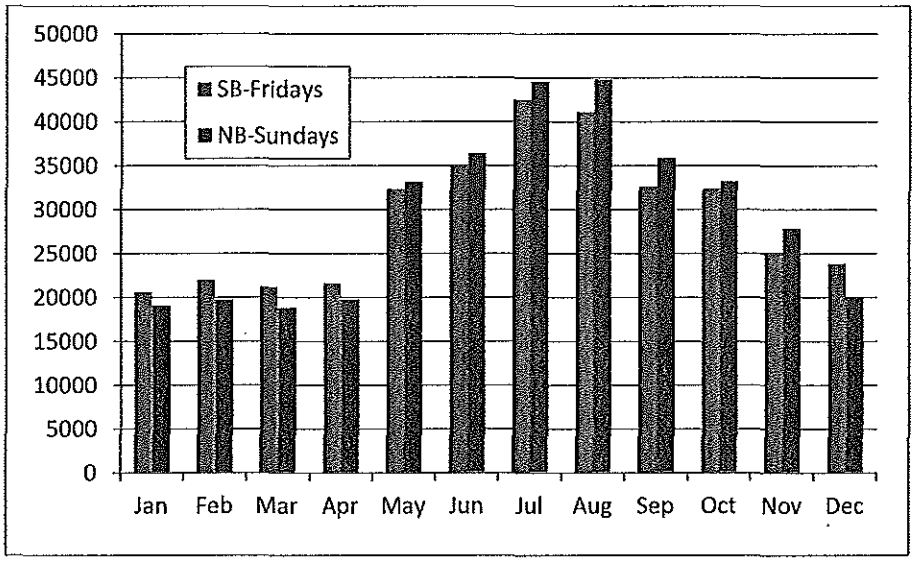
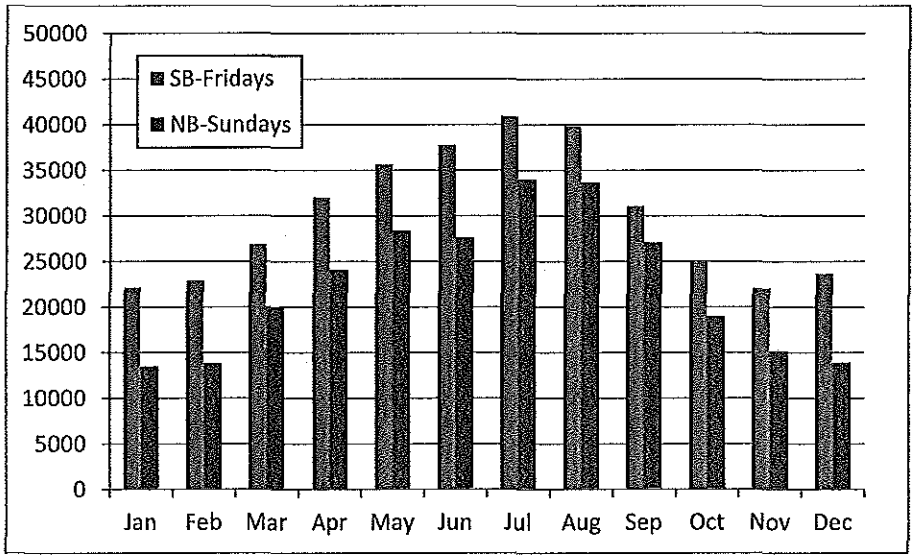


FIGURE 3: WEEKEND TRAFFIC PATTERNS ON THE BOURNE BRIDGE BY MONTH, 2010



One interesting phenomena shown above is that the Bourne Bridge has higher Friday Southbound traffic than Sunday Northbound traffic. This indicates that there is likely some diversion from the Sagamore Bridge to the Bourne Bridge to avoid traffic congestion. Based on the above charts, the strong seasonal travel patterns to the Cape are evident. Three distinct traffic periods can be identified:

- Base: January - April, November-December
- Shoulder: May-June, September -October
- Peak: July-August

The above seasonal definitions are used in the charts below, showing hourly patterns within each season. For these charts, the volumes crossing the Bourne and Sagamore Bridges are combined to get the total travel demand for weekend automobile travel to and from the cape.

FIGURE 4: FRIDAY SOUTHBOUND HOURLY TRAFFIC VOLUMES, BOURNE AND SAGAMORE BRIDGE COMBINED, 2010

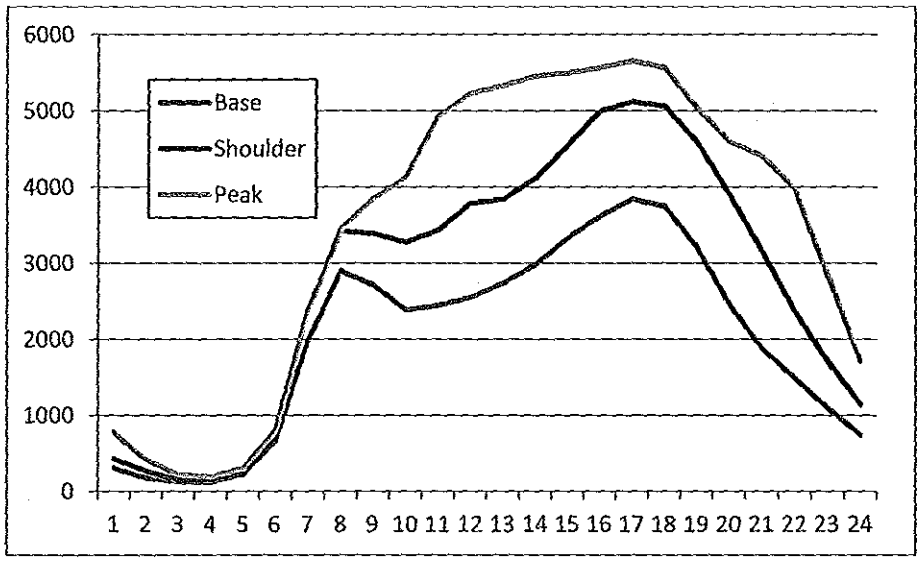
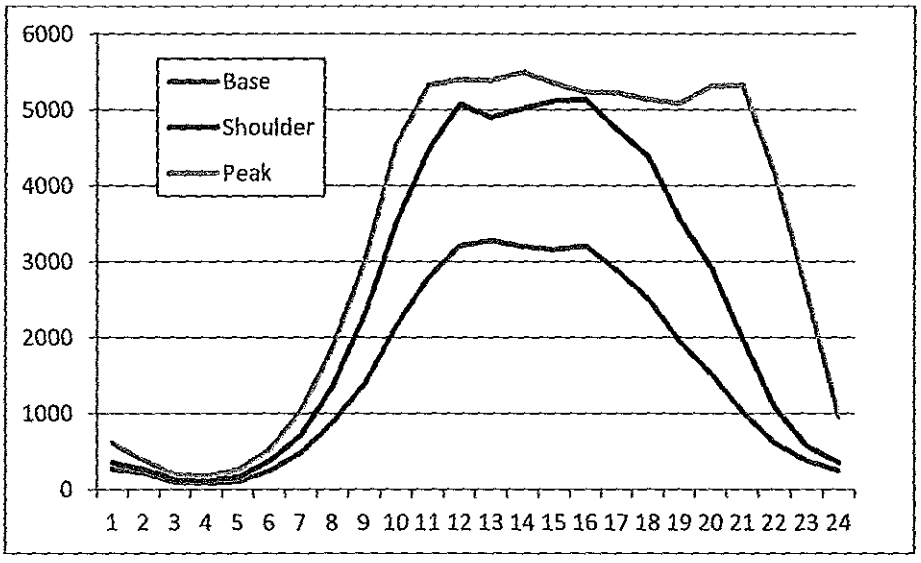


FIGURE 5: SUNDAY NORTHBOUND HOURLY TRAFFIC PATTERNS, BOURNE AND SAGAMORE BRIDGE COMBINED, 2010



The charts above show that the peak southbound traffic demand occurs generally from 4:00 to 5:00 p.m. on Fridays, with high volumes of traffic and accompanying congestion extending from 11:00 a.m. to 8:00 p.m. The Sunday northbound traffic exhibits a more evenly distributed pattern throughout the afternoon and evening hours, with high traffic volumes and congestion extending from 10:00 a.m. to 10:00 p.m. This high degree of "peak spreading" indicates that many visitors are altering their schedule in effort to avoid traffic congestion. For the optimal passenger rail ridership, the schedule should be established to capture the peak desired travel times. This

appears to be between 5 and 6 p.m. on Fridays for southbound traffic between 1 and 2 p.m. Sunday afternoons for northbound travel.

INTERCITY BUS

There is frequent bus service between Boston and Cape Cod provided by Plymouth & Brockton Street Railway Company (P&B) and Peter Pan/Bonanza Bus Lines. P&B buses terminate at the Hyannis Transportation Center, where connections can be made for buses serving Provincetown and the Outer Cape, as well as local transit services. Peter Pan buses serve the Inner Cape and terminate at Woods Hole, where passengers can connect to ferry service to Martha's Vineyard. The following tables show the current Friday peak hour schedules for buses departing South Station for the Cape, and the Sunday departures from the Hyannis Transportation Center.

TABLE 1: BUS DEPARTURES FROM SOUTH STATION ON FRIDAY AFTERNOONS

Company	Route #	Scheduled Time	Departing To
P&B	231	2:45 PM	Hyannis
Peter Pan	531	3:00 PM	Woods Hole
P&B	233	3:20 PM	Hyannis
P&B	237	3:45 PM	Hyannis
Peter Pan	535	4:00 PM	Woods Hole
P&B	239	4:10 PM	Hyannis
P&B	245	4:35 PM	Hyannis
P&B	247	4:55 PM	Hyannis
Peter Pan	541	5:00 PM	Woods Hole
P&B	257	5:15 PM	Hyannis
Peter Pan	547	5:30 PM	Woods Hole
P&B	259	5:35 PM	Hyannis
Peter Pan	553	6:00 PM	Woods Hole
P&B	261	6:10 PM	Hyannis
P&B	267	6:30 PM	Hyannis
P&B	269	6:45 PM	Hyannis
P&B	273	7:45 PM	Hyannis
Peter Pan	563	8:00 PM	Woods Hole
P&B	277	8:45 PM	Hyannis

TABLE 2: SUNDAY BUS SERVICE FROM THE HYANNIS TRANSPORTATION CENTER

Company	Route #	Scheduled Time	Departing To
P&B	1236	12:30 PM	Boston - South Station
Peter Pan	917	12:30 PM	Providence
P&B	1240	1:30 PM	Boston - South Station
P&B	1244	2:30 PM	Boston - South Station
Peter Pan	921	3:15 PM	Providence
P&B	1250	3:30 PM	Boston - South Station
P&B	1254	4:30 PM	Boston - South Station
Peter Pan	925	5:15 PM	Providence
P&B	1262	6:30 PM	Boston - South Station

Service Features

The following summarize key attributes of the current bus service providers for the 2011 summer season.

Plymouth and Brockton

- $19/$34 one way/round trip South Station to Hyannis or Barnstable Park and Ride.
- No reservations, first come-first served.
- No amenities are currently offered.
- Delays are common on summer Friday afternoons.

Peter Pan

- $27/$52 South Station to Woods Hole;
- Reserved seats and priority boarding available for additional fee.
- Wi fi available on newer buses, upgrades are phasing into the fleet.
- Delays are common on summer Friday afternoons.

Bus Ridership between South Station and Hyannis

Data on bus boardings and alightings was collected during three peak Fridays and three peak Sundays at South Station and the Hyannis Transportation Center. Passengers boarding and alighting each bus were counted in order to estimate a bus mode share from Boston to Hyannis. In addition, a passenger survey was conducted to determine origins and destinations of their trip, as well as other information useful to transit service planning. The following table summarizes the bus passenger volume from Boston (including South Station and Logan) to the Hyannis area on peak Fridays between 2:00 p.m. and 8:00 p.m.

TABLE 3 BUS TRAVEL FROM BOSTON TO THE HYANNIS AREA

	Hyannis	Barnstable	**Total**
South Station	139	93	232
Logan	79	53	132
Total	**218**	**146**	**364**

Passenger Travel Behavior and Attitudes

A brief survey was administered to passengers boarding buses traveling between South Station and Cape Cod in order to understand why passengers are choosing to ride the bus, their travel patterns, and important factors in their mode choice. A total of 297 survey responses were received. The first two charts separate the Plymouth and Brockton (P&B) bus riders from the Peter Pan riders, and the remaining charts show combined data.

FIGURE 6: BUS PASSENGER SURVEY RESULTS

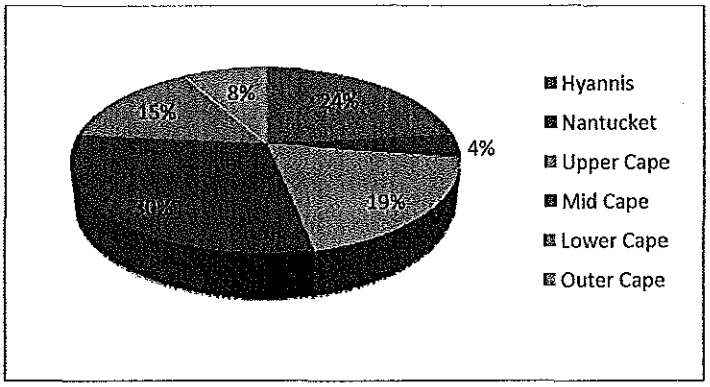
The chart to the right shows the destinations of the P&B bus travelers:

Upper Cape (Sandwich, Bourne, Falmouth, Mashpee)

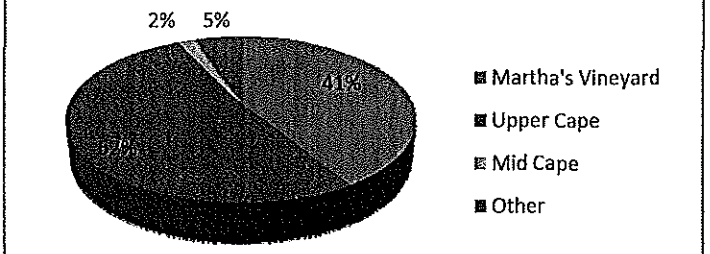
Mid Cape (Osterville, Barnstable, Yarmouth, Dennis)

Lower Cape (Harwich, Chatham, Brewster, Orleans)

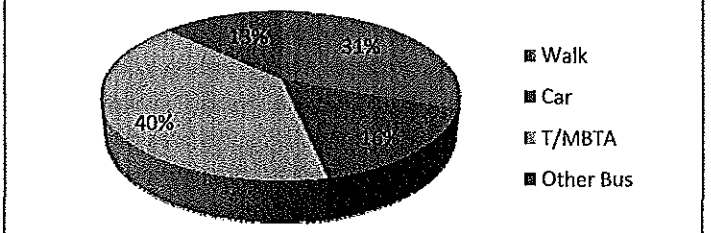
Outer Cape (Eastham, Wellfleet, Truro, Provincetown)



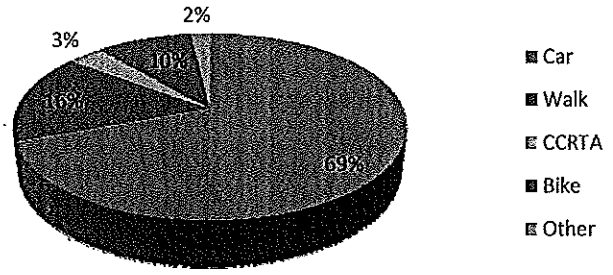
The chart to the right shows the distribution in the destinations of the Peter Pan bus travelers.



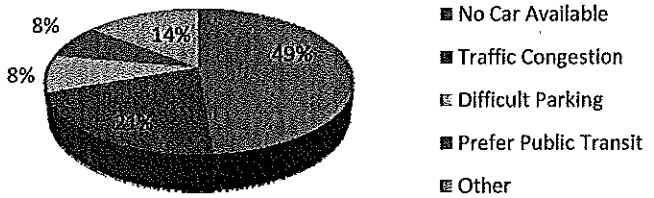
This chart shows the mode of transportation utilized by the bus passengers boarding at South Station. Few arrived by car, and more than half arrived by other means of public transportation.



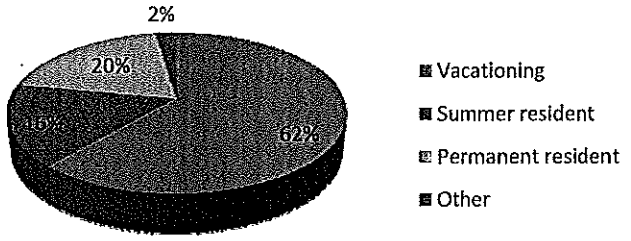
This chart shows the mode of transportation that bus riders will use once they are on the Cape for the duration of their stay.



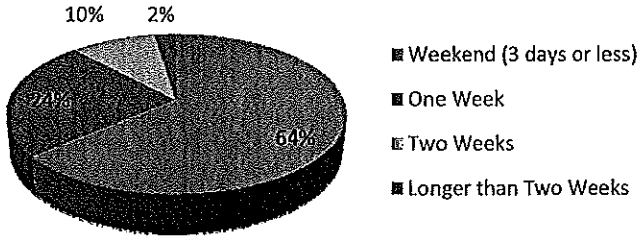
The chart to the right shows the primary reasons for using the bus. Nearly half were using the bus because they did not have a car available for the trip. Traffic congestion was another significant factor in favor of the bus.



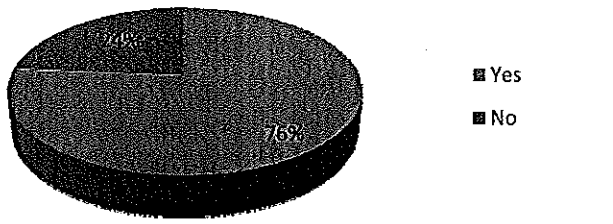
This chart shows the profile of the bus riders, in terms of a vacationer versus a permanent or seasonal resident of the cape.



This chart shows the length of stay for the Friday/Sunday bus travelers. Weekends are by far the dominant pattern.



Over three quarters of the bus riders have taken the bus before.



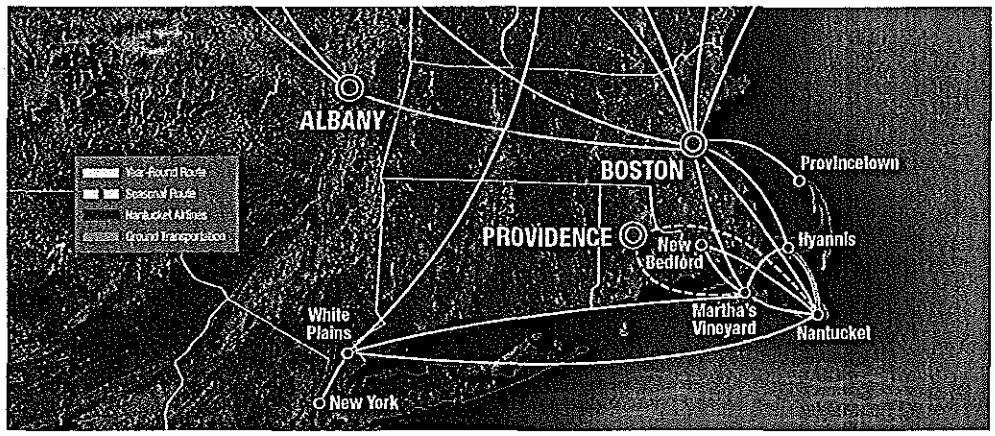
From the above data, there are several important observations about the bus users:

- Most are staying for a weekend visit on the Cape.
- They are traveling to a variety of destinations on the Cape.
- They have a variety of reasons for taking the bus, but the most common is that they do not have a car available for the trip.
- Once they are on the Cape, they will rely on a someone's car to get around.
- They are repeat customers, and have made bus trips in the past.

AIR TRAVEL

Air service is offered by Cape Air between Boston and Hyannis, and also between Boston and Nantucket. There are generally three roundtrip flights per day to Hyannis, and 19 flights per day to Nantucket during the peak season. Fares are highly variable, and depend on how far in advance tickets are purchased. Generally, round trip fare between Boston Hyannis ranges from $200 to $300, and a roundtrip fare between Boston and Nantucket ranges from $300 to $450. Many of the passengers on these flights are connecting from other flights at Logan.

FIGURE 7 CAPE AIR REGIONAL SERVICE MAP



FERRY SERVICE

There are a number of ferry services available at Hyannis which could provide connections via the proposed passenger rail. The bus passenger data indicated a significant portion of bus riders heading to Woods Hole were connecting to the passenger ferry to Martha's Vineyard, but very few connections were made in Hyannis to the Nantucket Ferry. This represents a potential market for the passenger rail to the HTC, as there are a variety of ferry services to both Nantucket and Martha's Vineyard.

TABLE 4 FERRY SERVICES FROM HYANNIS

Operator/Type	Destination	Passenger Fare (Adult Round Trip)	Daily Frequency (peak season)
Steamship Authority	Fast Ferry to Nantucket	$35	5
Steamship Authority	Seasonal Traditional Ferry to Nantucket	$35	3
Hy-Line Cruises	Fast Ferry to Nantucket	$77	6
Hy-Line Cruises	Seasonal Tradltional Ferry to Nantucket	$45	3
Hy-Line Cruises	Fast Ferry to Martha's Vineyard	$71	5
Hy-Line Cruises	Seasonal Traditional Ferry to Martha's Vineyard	$48	1

Parking in Hyannis is a significant cost for ferry passengers at $15 per calendar day. A weekend trip to Nantucket from Friday through Sunday trip would add $45 to the cost of a trip. Currently very few ferry passengers travel to Hyannis by bus, possibly due to the uncertainty in travel time. The passenger rail service's higher degree of reliability could be an important service attribute that would encourage a mode shift from driving to passenger rail.

Transportation Mode Options

The following sections summarize the key features of the major alternative modes for travel between Boston and Hyannis and Nantucket.

Boston to Hyannis

The following table shows the major options that travelers between Boston and Hyannis currently have available. While there are a myriad of more options that combine driving and transit, these represent the major choices that would be competing with the proposed passenger rail.

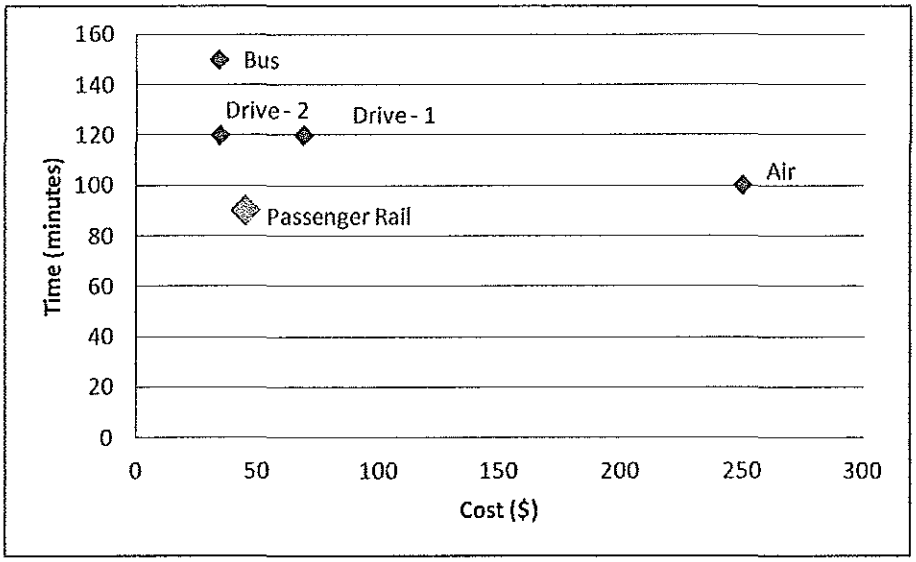
TABLE 5: TRAVEL OPTIONS FOR BOSTON TO HYANNIS

Mode	Drive – 1*	Drive – 2*	Bus	Air	Rail
Cost	$ 70.00	$ 35.00	$ 34.00	$ 250.00	$ 40.00
Time	120	120	150	100	90
Daily Frequency	-	-	21	3	1

* Drive-1: Driving alone; Drive-2 = driving with 2 people to share the cost. Cost assumes $0.50 per mile at 70 miles one way. Travel time for driving is based on available peak data from Google Traffic and Bridgewater State University. Bus travel time reflects driving delays plus additional delays due to stops en route to Hyannis. Air travel time assumes arriving to airport 60 minutes in advance of flight departure.

The chart below illustrates the time and cost of the above options, and indicates that the Passenger Rail service provides a competitive option due to the lower travel time. However, this advantage will be at least partially offset by the low frequency of service.

FIGURE 8: TIME AND COST OF OPTIONS FOR BOSTON TO HYANNIS TRAVEL



The following table provides an estimate of the mode share of travel between Boston and Hyannis, based on prevailing traffic patterns, estimated distribution of destinations on the Cape, and bus passenger counts. The following assumptions were made for this estimate:

- Vehicle occupancy 2.15, based in NHTS 2009 data for recreational trips in Massachusetts
- Boston traffic primarily uses the Sagamore Bridge, and suburban traffic primarily diverts to Bourne Bridge.
- Distribution of vehicle traffic to Cape is proportional to the distribution of housing units (including vacation rentals).

TABLE 6: ESTIMATE OF MODE SPLIT: BOSTON TO HYANNIS TRAVELERS ON PEAK SUMMER FRIDAY AFTERNOONS (2:00 P.M. TO 8:00 P.M.)

Mode	Estimate	Percent
Drive	10,783	96.7%
Transit	363	3.3%
Fly	9	0.1%
Total	11,155	

BOSTON TO NANTUCKET

The following table shows the major options for travelers between Boston and Nantucket. While there are a other options that combine driving, ferry, flight and transit, these represent the major choices that would likely be competing with the proposed passenger rail.

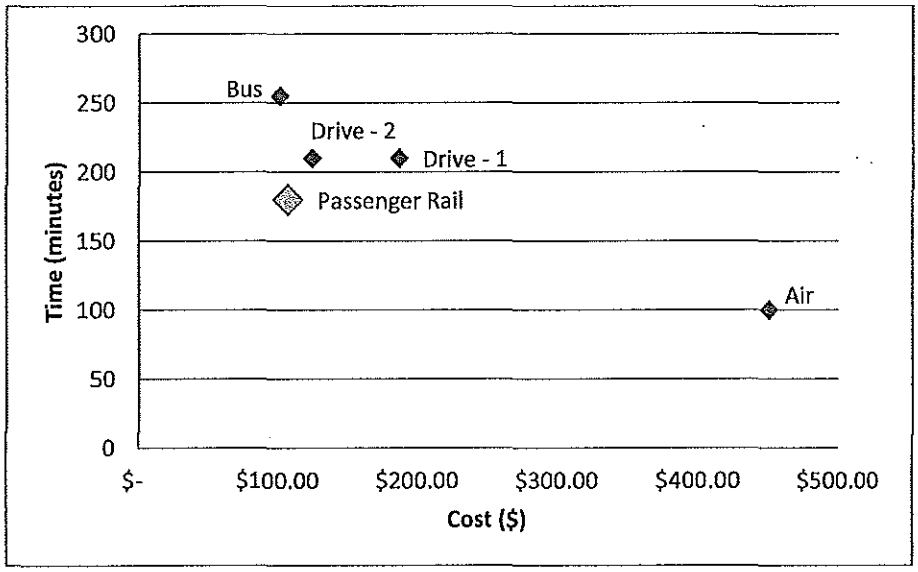
TABLE 7: TRAVEL OPTIONS FOR BOSTON TO NANTUCKET

Mode	Drive - 1	Drive - 2	Bus	Air	Rail
Cost	$ 186.00	$ 124.00	$ 101.00	$ 450.00	$ 107.00
Time (minutes)	210	210	255	100	180
Daily Frequency	11	11	11	19	1

* Drive-1: Driving alone; Drive-2 = driving with 2 people to share the cost. Cost assumes $0.50 per mile at 70 miles one way. Travel time for driving is based on available peak data from Google Traffic and Bridgewater State University. Bus travel time reflects driving delays plus additional delays due to stops en route to Hyannis. Air travel time assumes arriving to airport 60 minutes in advance of flight departure.

The chart below illustrates the time and cost of the above options, and indicates that the Passenger Rail service provides a competitive option in that the travel time is lower, though this will be offset by lower frequency as potential riders chose among these options.

FIGURE 9: TIME AND COST FOR BOSTON TO NANTUCKET TRAVEL MODES



Based on available data from the Massachusetts DOT, the Steamship Authority passenger ferry boardings, and the bus rider survey, the following is shows an estimated mode split for Boston to Nantucket travel.

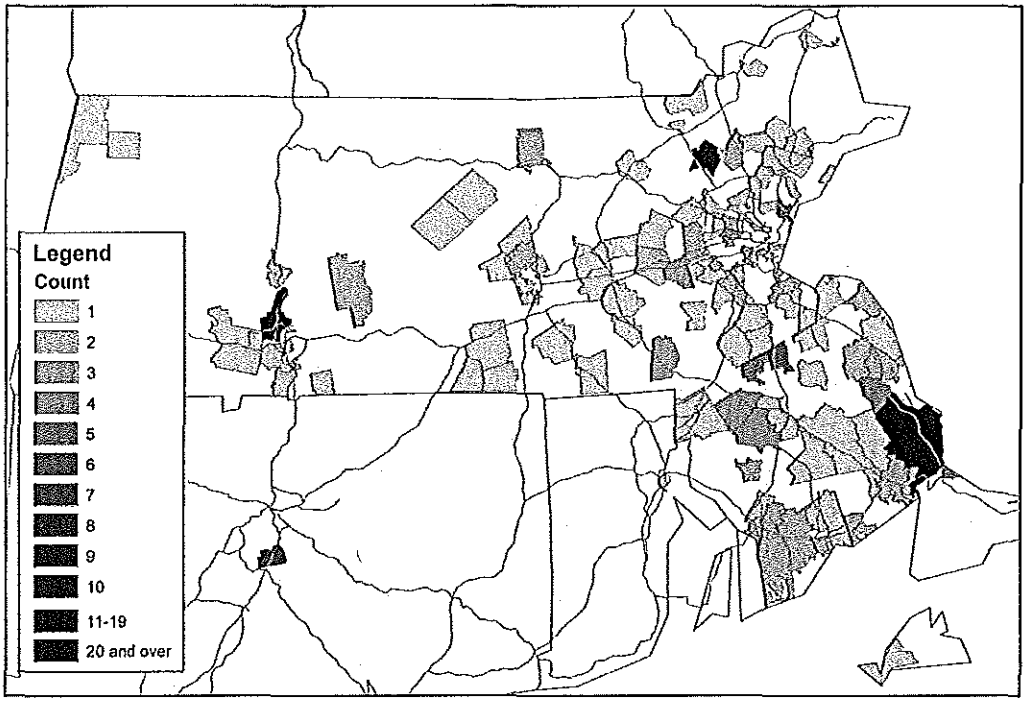
TABLE 8 ESTIMATE OF MODE SPLIT: BOSTON TO HYANNIS FERRY TRAVELERS ON PEAK SUMMER FRIDAY AFTERNOONS (2:00 P.M. TO 8:00 P.M.)

Mode	Estimate	Percent
Drive to Ferry	1,824	96.1%
Transit to Ferry	3	0.2%
Fly	72	3.8%
Total	1,899	

MIDDLEBOROUGH TO HYANNIS

Significant traffic to the Hyannis area comes from suburban Boston, southeastern Massachusetts, and western Massachusetts. The map below was generated based on license plate data collected by the Cape Cod Commission, and shows a broad distribution of off-cape traffic. Some of these travelers could potentially board a passenger train at Middleborough, where there is generally capacity for parking, as well as more capacity on the train than at South Station. In order to draw passengers on at this location, there would need to be a compelling reason to lure riders. These could include on-board amenities, improved travel time compared to driving, and savings in parking costs for ferry passengers.

FIGURE 10: ZIP CODES OF ORIGIN FOR HYANNIS AREA TRAFFIC (CAPE COD COMMISSION)



The MBTA reports that parking capacity is typically available at the Middleborough Park and Ride station. Based on the distribution of origins of Cape traffic in the Hyannis area shown above, many of these drivers would pass by the Middleborough T Station en route to the Cape. In order to divert some of these drivers to use the passenger rail, service amenities and advantages would need to be offered. These would include access to ferries with savings on parking; faster travel times, and on board amenities that allow one to "start their vacation" when they board the train. The potential market that might use service from Middleborough will be similar to the potential market from Boston, which is discussed in the following section.

Key Markets

There is a huge potential market for the proposed Cape Cod Seasonal Passenger Rail service. The service will offer a unique range of attributes, many of which will be appealing to potential riders, although the low frequency will be a significant obstacle. Therefore, the marketing and outreach effort should focus on potential riders that would find the rail service most appealing. The following sections describe some of these potential markets.

Car free Weekenders

A number of trends point to a growth of visitors who are interested in a convenient, car-free weekend in the Hyannis area. The current bus and proposed passenger rail services provide convenient transportation Hyannis, and the CCRTA local fixed route services provide transportation to hotels, beaches, and entertainment. Hyannis has a relatively high concentration of establishments offering music and entertainment, including many bars, restaurants, and the Cape Cod Melody Tent.

> "Hyannis is the "metro" center of Cape Cod and home to a number of bars, nightclubs and restaurants that offer entertainment."

While this market is already served by the P&B buses, there is a potential market that would prefer a service with more comfort and amenities that a passenger train could offer. These added features of the train would be offset by its lower frequency, which will be the biggest constraint for this market. The "carfree vacation" market is a potentially growing segment, as younger people today are much more amenable to take transit, less wed to their cars, and place greater importance on being "wired" into the social network and able to communicate while traveling. This trend bodes well for transit in general, and indicates that there could be a growing "weekender" market that would ride transit to the Cape.

Bicyclists

Bicycling is growing substantially in popularity, as are "active travel vacations." This market could be considered a sub-set of the above market. While the P&B buses are willing to allow bikes in the luggage area for a fee (see table below), there is very limited available of space during the peak weekend periods. Therefore, being able to take a bicycle on a peak weekend is highly uncertain, and a potential bicyclists transit rider may have to wait for several buses to come and go before one has space for their bicycle.

Bicycles will be carried - if space permits - after all other luggage is loaded, at the following rates

BICYCLES:	
All points between Boston & Hyannis	5.00
All Points between Hyannis & Provincetown	5.00
TOTAL BOSTON TO P'TOWN	10.00

The passenger rail could provide a luggage area that allows for ample bicycle storage, and this could be a key marketing feature of the passenger rail service. This could be a particular focus for the service from Middleborough, as many potential weekend cyclists may find that more convenient than bringing their bicycles to South Station, depending on their trip origin.

Nantucket Ferry Passengers

The passenger rail could provide convenient service for travelers heading for Nantucket for a weekend, by providing supplemental capacity during the highest peak traffic periods. Our survey suggests that very few ferry passengers arrive by bus, indicating a significant potential market for transit. The cost of parking in Hyannis creates an economic advantage for the passenger train, and the increased reliability of the schedule, when compared to driving, creates a further advantage. Again, the limited train frequency is the greatest detraction to using the train. Providing a reliable, enjoyable service from Boston to Nantucket by transit will have growing appeal with the greater interest in transit among younger people,

RIDERSHIP ESTIMATE

- Describe Optimal Service Characteristics
  - fare
  - schedule
  - stops
  - amenities
  - joint ticketing opportunities
  - other -
  - intermodal connections
    - Bike to ferry
    - Walk to Hyannis
    - Bike to Hyannis or beyond
    - Public transit
- Estimate Ridership (provide high/low range)

OTHER CONSIDERATIONS

- Due to the niche service, marketing the train service will be important to highlight its features and reach several target markets:
  - Young people interested in a car-free weekend in the Hyannis area
  - Nantucket vacationers planning to take the passenger ferry, and therefore traveling relatively light.
- The service planning and marketing can take advantage of growing potential of transit in younger adults.
  - Gen Y-ers are open to transit and far less wed to their cars for transportation,
  - CCRTA ridership is growing overall and has a positive image in the community
- Amenities on the train will add to the appeal compared to bus options. These will be important to draw in riders to offset the disadvantage of low frequency. These might include:
  - Refreshments
  - Bike racks on train
  - Reservations
  - Transfer to bus in case passenger misses the train, since there's only one per day.
- Over the longer term, there are a number of actions that could contribute to a more appealing multi-modal environment in the Hyannis area. First and foremost is to improve or enhance the pedestrian and bicycle environment, in order to assure that "car-free" vacationers feel safe and comfortable. The following are additional enhancements for consideration:
  - Car sharing or affordable short term rentals could make train more attractive, so visitors could explore cape by car during their stay.
  - Bike rentals or bike sharing at station, with good racks for strapping luggage, could be appealing. This should be combined with improved bicycle network in the Hyannis area, connecting the HTC with hotels, beaches, shopping and entertainment.